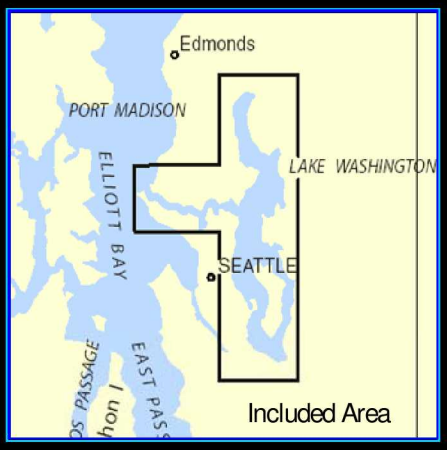
BookletChart™

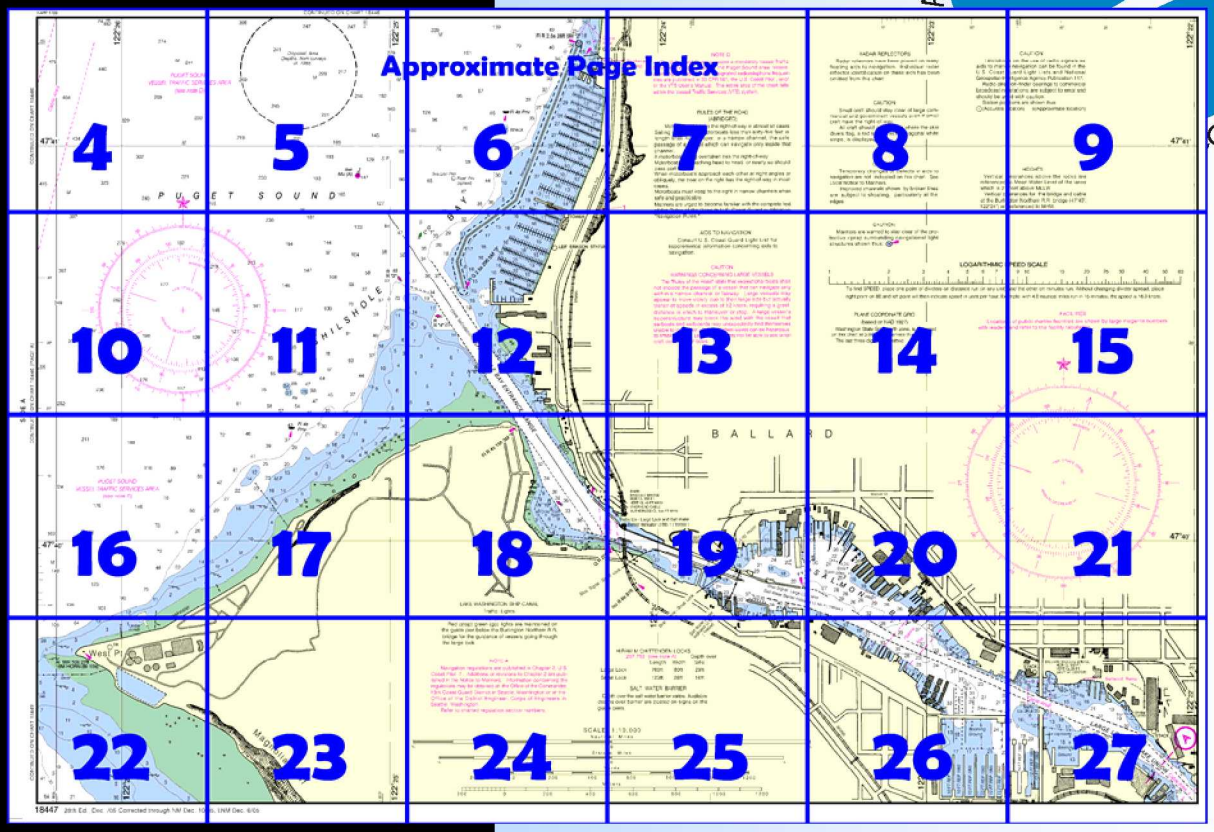
Lake Washington Ship Canal and Lake Washington

(NOAA Chart 18447)



A reduced scale NOAA nautical chart for small boaters. When possible, use the full size NOAA chart for navigation.

- ☑ *Complete, reduced scale nautical chart*
- ☑ *Print at home for free*
- ☑ *Convenient size*
- ☑ *Up to date with all Notices to Mariners*
- ☑ *United States Coast Pilot excerpts*
- ☑ *Compiled by NOAA, the nation's chartmaker.*



Home Edition (not for sale)

Published by the
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National Ocean Service
Office of Coast Survey
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What are Nautical Charts?

Nautical charts are a fundamental tool of marine navigation. They show water depths, obstructions, buoys, other aids to navigation, and much more. The information is shown in a way that promotes safe and efficient navigation. Chart carriage is mandatory on the commercial ships that carry America's commerce. They are also used on every Navy and Coast Guard ship, fishing and passenger vessels, and are widely carried by recreational boaters.

What is a BookletChart™?

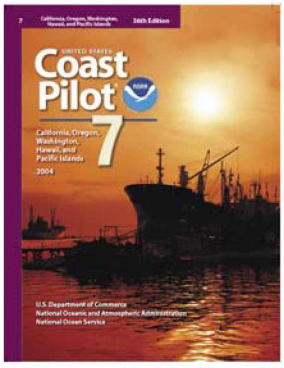
This BookletChart is made to help recreational boaters locate themselves on the water. It has been reduced in scale for convenience, but otherwise contains all the information of the full-scale nautical chart. The bar scales have also been reduced, and are accurate when used to measure distances in this BookletChart. See the Note at the bottom of page 5 for the reduction in scale applied to this chart.

Whenever possible, use the official, full scale NOAA nautical chart for navigation. Nautical chart sales agents are listed on the Internet at http://www.NauticalCharts.NOAA.gov.

This BookletChart does NOT fulfill chart carriage requirements for regulated commercial vessels under Titles 33 and 44 of the Code of Federal Regulations.

Notice to Mariners Correction Status

This BookletChart has been updated for chart corrections published in the U.S. Coast Guard Local Notice to Mariners, the National Geospatial Intelligence Agency Weekly Notice to Mariners, and, where applicable, the Canadian Coast Guard Notice to Mariners. Additional chart corrections have been made by NOAA in advance of their publication in a Notice to Mariners. The last Notices to Mariners applied to this chart are listed in the Note at the bottom of page 7. Coast Pilot excerpts are not being corrected.



[Coast Pilot 7, Chapter 13 excerpts]

(120) **Shilshole Bay** is between Meadow Point and West Point. It is an open bight from which the Lake Washington Ship Canal is entered, and is the site of the largest marina in the Seattle area. Clay cliffs extend for about 0.5 mile S of the canal entrance. Golden Gardens Park, Seattle Department of Parks and Recreation is N of the marina and extends up to and includes Meadow Point.

(121) **Shilshole Bay Marina,** the small-craft basin just N of the canal entrance, is administered by the Port of Seattle. A 4,400-foot breakwater, marked at each end by a light, protects the basin on its W side. The basin has two entrances. In June 1998, the reported controlling depths were 15 feet in the N and S entrances, depths alongside the floats in the basin were about 10 feet.

(123) **West Point,** at the N entrance to Elliott Bay, is a low, sandy point which rises abruptly to an elevation of over 300 feet 0.5 mile from its tip. The edge of the shoal extending WSW from the point is marked by a lighted buoy. **West Point Light** (47°39'43"N., 122°26'09"W.), 27 feet above the water, is shown from a 23-foot white octagonal tower attached to a building on the end of the point; a fog signal is at the station. Prominent in the area are the sump tanks of a sewage treatment plant about 0.1 mile E of the light, a VTS antenna tower between the plant and the light, and a large white dome about 1 mile ESE of the light.

(126) **Magnolia Bluff,** largely bare, light-colored, and rising in places to nearly 300 feet, extends along the N shore from West Point to Smith Cove. **Fourmile Rock** is 60 yards offshore, 1.7 miles SSE of West Point Light. A light is on the rock.

(196) **Lake Washington Ship Canal**Canal, Lake Washington Ship 18447 extends from Puget Sound through Shilshole Bay, Salmon Bay, Lake Union, Portage Bay, and Union Bay to deep water in Lake Washington. Federal project depth through the canal is 30 feet, which is generally maintained.

(198) The **Hiram M. Chittenden Locks,** a double lock, and a fixed dam are at the narrows of the entrance to Salmon Bay, 1.2 miles in from the sound. The large lock, a two-chamber structure, has a clear length of 760 feet, width of 80 feet, lift of 26 feet, and depth over the lower miter sill of 29 feet. The small lock has a clear length of 123 feet, width of 28 feet, lift of 26 feet, and depth over the lower sill of 16 feet. Passage time is less than 30 minutes for large vessels and 5 to 10 minutes for small vessels.

(202) **Salmon Bay** extends for about 0.8 mile from the E end of the locks to the Ballard (15th Avenue) Bridge. There are numerous piers and floats with extensive small-craft facilities on the bay. Fishermen's Terminal, operated by the Port of Seattle, is immediately W of the Ballard Bridge.

(203) From Salmon Bay the canal leads SE to **Lake Union,** which is about 1 mile long in a N-S direction and about 0.5 mile wide. Depths in the lake range generally from 32 to 49 feet. There is a 10-foot shoal about 200 yards offshore from the SW end of the lake; it is marked by a buoy. Four private buoys in the N part of Lake Union mark an unrestricted speed zone, which is used by boat builders around the lake as a testing area. The buoys are frequently repositioned; caution is advised when transiting the area. There are numerous marinas and repair facilities, and several commercial wharves from which various commodities are shipped by barge.

(205) **Portage Bay,** E of Lake Union has many slips and finger piers for small craft; gasoline, diesel fuel, and hull and engine repairs are available on the NE shore.

(206) **Montlake Cut (Portage Cut)** leads from Portage Bay past the conspicuous buildings and athletic stadium of **University of Washington,** on the N side, thence into **Union Bay,** and thence into Lake Washington.

(208) **Lake Washington,** the large freshwater lake on Seattle's E side, provides deep and protected water over most of its length of nearly 16 miles. Its shores are studded with private piers and landings, and there are marinas and small-craft repair places at many locations.

(209) There are few commercial installations. Except for a few oil wharves, commercial shipments are by barge. A large offshore wharf of a tar and creosote company is at **May Creek (Port Quendall)** on the E side of the lake opposite the S end of Mercer Island.

(210) State Route 520 pontoon bridge crossing the lake between Seattle and Evergreen Point has a fixed span at the E and W ends. The clearances are 57 feet at the E end and 44 feet at the W end. The floating drawspans at the center of the bridge provide an opening 100 feet wide. Interstate Route 90 pontoon bridge between Seattle and East Seattle, on the N end of **Mercer Island**, has fixed spans at the E and W ends with clearances of 29 feet. The fixed highway (Interstate Route 90) bridge on the E side of Mercer Island, from Barnabie Point to the mainland, has a clearance of 71 feet. The underwater remains of the E and W piers of a former fixed bridge are just SE of the Interstate Route 90 bridge. Mariners should use caution when outside the main navigation channel.

Table of Selected Chart Notes

NOTE E

See side B for bridge clearances.

NOTE C

All vessels are warned that seaplanes may be taking off or landing on Lake Union.

NOTE B

Submerged mooring cables and ruins are located in this area.

PLANE COORDINATE GRID

(based on NAD 1927)

Washington State Grid, north zone, is indicated by dashed ticks at 10,000 foot intervals. The last three digits are omitted.

WARNING

The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

CAUTION

BASCULE BRIDGE CLEARANCES

For bascule bridges, whose spans do not open to a full upright or vertical position, unlimited vertical clearance is not available for the entire charted horizontal clearance.

Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

HEIGHTS

Vertical clearances above the locks are referenced to Mean Water Level of the lakes which is 21 feet above MLLW.

Vertical clearances for the bridge and cable at the Burlington Northern R.R. bridge (47°40', 122°24') are referenced to MHW.

All craft should avoid areas where the skin divers flag, a red square with a diagonal white stripe, is displayed.

CAUTION

BASCULE BRIDGE CLEARANCES

For bascule bridges, whose spans do not open to a full upright or vertical position, unlimited vertical clearance is not available for the entire charted horizontal clearance.

RADAR REFLECTORS

Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

CAUTION

Limitations on the use of radio signals as aids to marine navigation can be found in the U.S. Coast Guard Light Lists and National Geospatial-Intelligence Agency Publication 117.

Radio direction-finder bearings to commercial broadcasting stations are subject to error and should be used with caution.

Station positions are shown thus:

⊙(Accurate location) ○(Approximate location)

CAUTION

Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.

CAUTION

Small craft should stay clear of large commercial and government vessels even if small craft have the right-of-way.

CAUTION

Mariners are warned to stay clear of the protective riprap surrounding navigational light structures shown thus:

CAUTION

SUBMARINE PIPELINES AND CABLES

Charted submarine pipelines and submarine cables and submarine pipeline and cable areas are shown as:

Pipeline Area *Cable Area*

Additional uncharted submarine pipelines and submarine cables may exist within the area of this chart. Not all submarine pipelines and submarine cables are required to be buried, and those that were originally buried may have become exposed. Mariners should use extreme caution when operating vessels in depths of water comparable to their draft in areas where pipelines and cables may exist, and when anchoring, dragging, or trawling.

Covered wells may be marked by lighted or unlighted buoys.

HORIZONTAL DATUM

The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83), which for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1927 must be corrected an average of 0.646" southward and 4.450" westward to agree with this chart.

CAUTION

Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

All craft should avoid areas where the skin divers flag, a red square with a diagonal white stripe, is displayed.

CAUTION

Small craft should stay clear of large commercial and government vessels even if small craft have the right-of-way.

CAUTION

Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.

RADAR REFLECTORS

Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

PLANE COORDINATE GRID

(based on NAD 1927)

Washington State Grid, north zone, is indicated on this chart at 5,000 foot intervals thus: -|+-

The last three digits are omitted.

ACKNOWLEDGMENT

The National Ocean Service acknowledges the exceptional cooperation received from members of the Bellevue Power Squadron, District 16, United States Power Squadrons, in continually providing essential information for revising this chart.

SAFETY HINTS

1. Keep your chart up to date by applying all Notices to Mariners corrections when you receive them.
2. Read carefully all notes printed on your chart, each is vital to safety afloat.
3. Learn the meaning of each symbol and abbreviation on your chart from Chart No. 1.
4. The compass on your chart shows variation from true north, however you must also correct your bearing for the deviation of your boat.
5. Constantly use your chart from the beginning to the end of each trip. Keep in mind the orientation of your boat with respect to the chart.
6. Maintain your position on the chart by retaining charted features with those you can identify in your surroundings.

NOTE D

The U.S. Coast Guard operates a mandatory Vessel Traffic Services (VTS) system in the Puget Sound area. Vessel operating procedures and designated radiotelephone frequencies are published in 33 CFR 161, the U.S. Coast Pilot, and/or the VTS User's Manual. The entire area of the chart falls within the Vessel Traffic Services (VTS) system.

RULES OF THE ROAD

(ABRIDGED)

Motorless craft have the right-of-way in almost all cases.

Sailing vessels and motorboats less than sixty-five feet in length shall not hamper, in a narrow channel, the safe passage of a vessel which can navigate only inside that channel.

A motorboat being overtaken has the right-of-way.

Motorboats approaching head to head or nearly so should pass port to port.

When motorboats approach each other at right angles or obliquely, the boat on the right has the right-of-way in most cases.

Motorboats must keep to the right in narrow channels when safe and practicable.

Mariners are urged to become familiar with the complete text of the Rules of the Road in U.S. Coast Guard publication "Navigation Rules."

NOTE D

The U.S. Coast Guard operates a mandatory Vessel Traffic Services (VTS) system in the Puget Sound area. Vessel operating procedures and designated radiotelephone frequencies are published in 33 CFR 161, the U.S. Coast Pilot , and/or the VTS User's Manual. The entire area of the chart falls within the Vessel Traffic Services (VTS) system.

Corrected through NM May 3/08, LNM Apr. 22/08

NOTE A

Navigation regulations are published in Chapter 2, U.S. Coast Pilot 7. Additions or revisions to Chapter 2 are published in the Notice to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 13th Coast Guard District in Seattle, Washington or at the Office of the District Engineer, Corps of Engineers in Seattle, Washington.

Refer to charted regulation section numbers.

Corrected through NM May 3/08, LNM Apr. 22/08

NOTE A

Navigation regulations are published in Chapter 2, U.S. Coast Pilot 7. Additions or revisions to Chapter 2 are published in the Notice to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 13th Coast Guard District in Seattle, Washington or at the Office of the District Engineer, Corps of Engineers in Seattle, Washington.

Refer to charted regulation section numbers.

Corrected through NM May 3/08, LNM Apr. 22/08

PRINT-ON-DEMAND CHARTS

This chart is available in a version updated weekly by NOAA for Notices to Mariners and critical corrections. Charts are printed when ordered using Print-on-Demand technology. New Editions are available 5-8 weeks before their release as traditional NOAA charts. Ask your chart agent about Print-on-Demand charts.

CAUTION

WARNINGS CONCERNING LARGE VESSELS

The "Rules of the Road" state that recreational boats shall not impede the passage of a vessel that can navigate only within a narrow channel or fairway. Large vessels may appear to move slowly due to their large size but actually transit at speeds in excess of 12 knots, requiring a great distance in which to maneuver or stop. A large vessel's superstructure may block the wind with the result that sailboats and sailboards may unexpectedly find themselves unable to maneuver. Bow and stern waves can be hazardous to small vessels. Large vessels may not be able to see small craft close to their bows.

Additional information can be obtained at nauticalcharts.noaa.gov.

POLLUTION REPORTS

Report all spills of oil and hazardous substances to the National Response Center via 1-800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).

AUTHORITIES

Hydrography and topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, and U.S. Coast Guard.

SUPPLEMENTAL INFORMATION

Consult U.S. Coast Pilot 7 for important supplemental information.

HEIGHTS

Vertical clearances above the locks are referenced to Mean Water Level of the lakes which is 21 feet above MLLW.

FACILITIES

Locations of public marine facilities are shown by large magenta numbers with leaders and refer to the facility tabulation.

MERCATOR PROJECTION AT SCALE 1:10,000 & 1:25,000

SOUNDINGS IN FEET

AT MEAN LOWER LOW WATER below the locks AND AT LOW WATER OF LAKE which is 20 FEET above the plane of MLLW in Puget Sound.

North American Datum of 1983

(World Geodetic System 1984)

CAUTION

This chart has been corrected from the Notice to Mariners (NM) published weekly by the National Geospatial-Intelligence Agency and the Local Notice to Mariners (LNM) issued periodically by each U.S. Coast Guard district to the dates shown in the lower left hand corner. Chart updates corrected from Notice to Mariners published after the dates shown in the lower left hand corner are available at nauticalcharts.noaa.gov.

PUBLIC BOATING INSTRUCTION PROGRAMS

The United States Power Squadrons (USPS) and U.S. Coast Guard Auxiliary (USCGAUX), national organizations of boatmen, conduct extensive boating instruction programs in communities throughout the United States. For information regarding these educational courses, contact the following sources:

USPS - Local Squadron Commander or USPS Headquarters, Post Office Box 30423, Raleigh, N. C. 27612, 919-821-0281.

USCGAUX - 13th Coast Guard District, 915 Second Ave., Seattle, WA 98174-1067, Tel. 206-553-7390 or USCG Headquarters (G-BAU), Washington, D.C. 20593-0001.

COLREGS, 80.1395 (see note A)

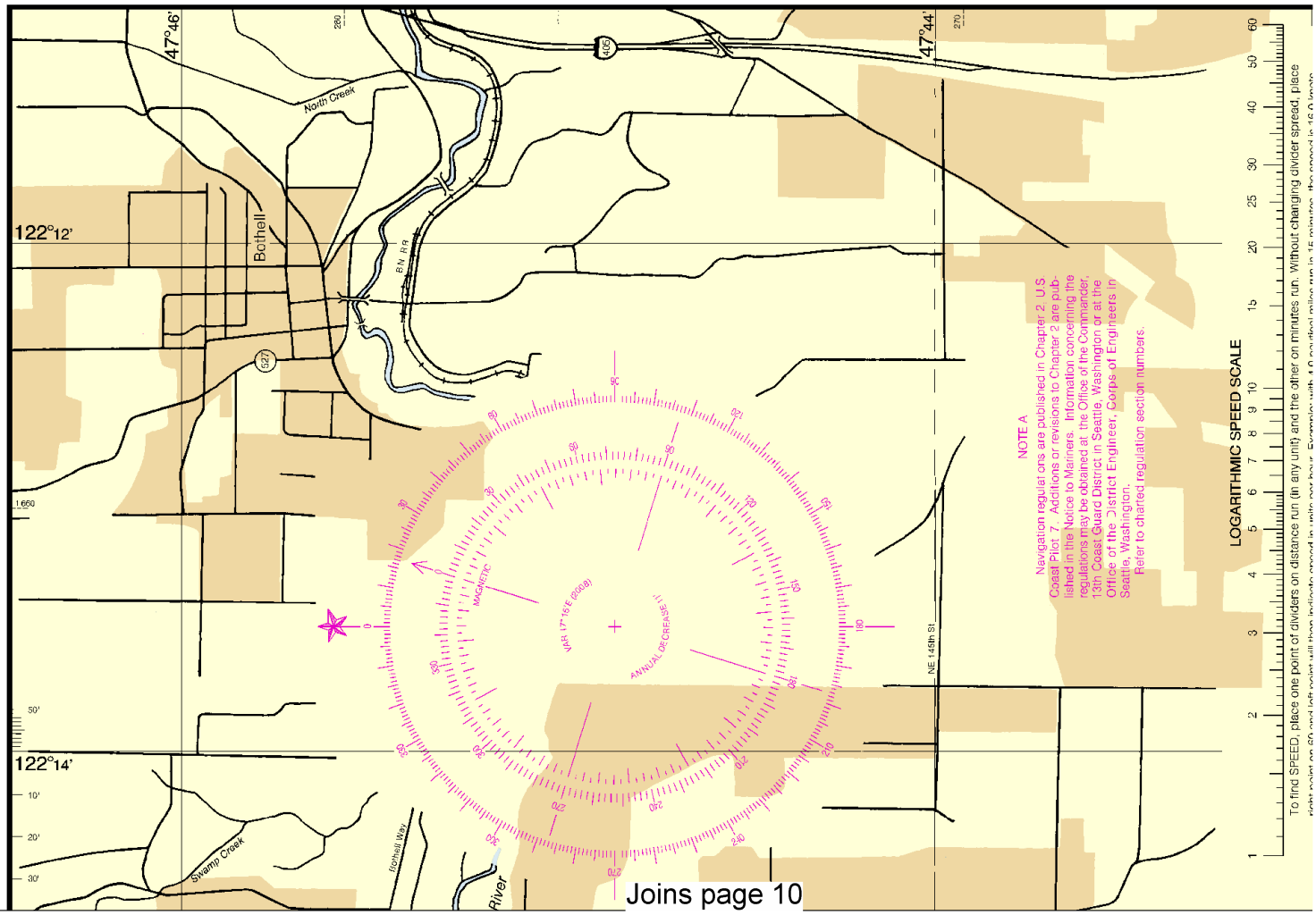
International Regulations for Preventing Collisions at Sea, 1972.

The entire area of this chart falls seaward of the COLREGS Demarcation Line.

18447 29TH ED

NO	SMALL CRAFT FACILITY	DEPTHS: CHART SIDE	DEPTHS: APPROACH-FEET (REPORTED)	DEPTHS: ALONGSIDE-FEET (REPORTED)	SERVICES: BERTHS-MOORINGS (TRANSIENTS)	SERVICES: RAMP	SERVICES: REPAIRS	SERVICES: MARINE RAILWAY-FEET	SERVICES: LIFT CAPACITY-TONS	SERVICES: BOAT RENTAL	SERVICES: CANOE-ROW-MOTOR-KAYAK	SERVICES: CHARTER-HOUSE-SAIL	SERVICES: FOOD-LODGING-CAMPING	SERVICES: PUMP-OUT STATION	SERVICES: TOILETS-SHOWERS-LAUNDRY	SERVICES: WINTER STORAGE WET-DRY	SUPPLIES: WATER-ICE	SUPPLIES: NAUTICAL CHART SALES	SUPPLIES: GROCERIES-HARDWARE	SUPPLIES: BAIT-TACKLE	SUPPLIES: DIESEL	SUPPLIES: OIL-GASOLINE
1	SHILSHOLE BAY MARINA	A	14	14	B E	S	HM		35	R C S	F		TSLP	WD	C	WI	GH	BT		DG		
73	YARROW BAY MARINA	B	40	6	B E		HMR		9	M			T P	WD	C	WI	H			DG		

THE LOCATIONS OF THE ABOVE PUBLIC MARINE FACILITIES ARE SHOWN ON THE CHART BY MAGENTA NUMBERS AND LEADERS.
THE TABULATED "APPROACH-FEET (REPORTED)" IS THE DEPTH AVAILABLE FROM THE NEAREST NATURAL OR DREDGED CHANNEL TO THE FACILITY.
THE TABULATED "PUMP-OUT STATION" IS DEFINED AS FACILITIES AVAILABLE FOR PUMPING OUT BOAT HOLDING TANKS.



Joins page 10

4

North

Printed at reduced scale. ~~SCALE 1:10,000~~ See Note on page 5.

Nautical Miles
0
Yards
200 0 200 400 600 800 1000 1200

SEATTLE, WASHINGTON, 2008

Predicted times and heights of high and low water-Pacific Standard Time. For Daylight Saving time, add 1 hour.
To predict local tide, apply the time difference listed in the facility tabulations to these tide predictions.

MAY 2008

Day	Time h.m.	Ht. ft.	Day	Time h.m.	Ht. ft.
1 Th	0117	10.9	16 F	0151	11.0
	0754	3.4		0852	0.5
	1395	9.4		1548	9.4
	1923	5.6		2045	5.6
2 F	0148	11.2	17 Sa	0218	10.8
	0828	1.8		0931	-0.4
	1441	9.3		1637	10.2
	2017	3.8		2136	6.4
3 Sa	0217	11.5	18 Su	0243	10.6
	0904	0.0		0949	-1.0
	1527	9.3		1730	10.7
	2108	4.7		2224	7.0
4 Su	0248	11.7	19 M	0310	10.3
	0942	-1.6		1017	-1.4
	1637	11.1		1758	11.1
	2159	5.6		2308	7.4
5 M	0322	11.8	20 Tu	0330	10.0
	1023	-2.8		1048	-1.7
	1732	11.7		1831	11.3
	2251	6.4		2350	7.8
6 Tu	0359	11.7	21 W	0410	9.7
	1106	-3.6		1121	-1.8
	1827	12.1		1904	11.4
	2344	7.0			
7 W	0441	11.5	22 Th	0030	7.7
	1153	-3.8		0444	9.5
	1923	12.2		1158	-1.7
				1938	11.4
8 Th	0041	7.3	23 F	0112	7.7
	0526	11.0		0521	9.2
	1242	-3.5		1231	-1.8
	1927	12.1		2016	11.4
9 F	0145	7.4	24 Sa	0156	7.6
	0621	10.3		0601	8.8
	1332	-3.1		1319	-1.2
	2120	11.8		2056	11.3
10 Sa	0256	7.2	25 Su	0246	8.3
	0724	9.5		0648	8.4
	1429	-1.6		1403	-0.7
	2220	11.6		2137	11.2
11 Su	0422	6.8	26 M	0345	8.8
	0840	8.5		0750	7.8
	1526	-0.3		1448	0.1
	2317	11.4		2218	11.2
12 M	0544	5.5	27 Tu	0444	6.0
	1009	7.8		0907	7.4
	1632	1.0		1538	1.1
				2256	11.3
13 Tu	0006	11.3	28 W	0538	4.8
	0644	4.2		1030	6.3
	1147	7.6		1633	3.4
	1738	2.4		2333	11.4
14 W	0048	11.3	29 Th	0625	3.9
	0726	2.6		1204	7.6
	1322	7.9		1733	3.7
	1845	3.6			
15 Th	0122	11.2	30 F	0008	11.5
	0816	1.6		0708	1.6
	1442	8.0		1251	8.3
	1948	4.7		1837	3.0
			31 Sa	0043	11.6
				0749	0.2
				1446	9.4
				1942	6.1

JUNE 2008

Day	Time h.m.	Ht. ft.	Day	Time h.m.	Ht. ft.
1 Su	0120	11.7	16 M	0157	10.1
	0832	1.8		0916	-1.3
	1351	10.9		1723	11.1
	2045	6.9		2326	8.0
2 M	0159	11.8	17 Tu	0233	9.9
	0915	-3.1		0951	-1.6
	1649	11.4		1756	11.4
	2145	7.5		2308	8.0
3 Tu	0241	11.8	18 W	0309	9.7
	1001	-3.9		1035	-1.8
	1740	12.0		1826	11.5
	2242	7.7		2344	7.9
4 W	0328	11.6	19 Th	0347	9.6
	1048	-4.3		1101	-2.0
	1831	12.3		1853	11.5
	2340	7.7			
5 Th	0418	11.3	20 F	0018	7.7
	1136	-4.2		0426	9.4
	1920	12.4		1139	-2.0
				1921	11.6
6 F	0039	7.5	21 Sa	0053	7.4
	0519	10.7		0507	9.6
	1225	-3.8		1216	-1.8
	2008	12.3		1950	11.7
7 Sa	0141	7.0	22 Su	0131	7.0
	0618	10.0		0552	8.9
	1315	-3.6		1259	-1.4
	2055	12.2		2021	11.7
8 Su	0247	6.9	23 M	0214	6.4
	0720	9.1		0643	8.5
	1408	-3.2		1343	-0.8
	2136	12.0		2050	11.6
9 M	0356	6.4	24 Tu	0301	5.8
	0834	8.2		0744	8.0
	1458	0.4		1416	-0.1
	2221	11.8		2124	11.8
10 Tu	0503	4.2	25 W	0351	4.5
	1000	7.5		0858	7.6
	1552	2.1		1458	2.0
	2301	11.6		2157	11.8
11 W	0603	3.0	26 Th	0442	3.2
	1140	7.3		1030	7.4
	1652	3.9		1548	3.6
	2338	11.4		2232	11.8
12 Th	0653	1.7	27 F	0534	1.7
	1305	7.6		1153	7.9
	1802	5.4		1648	5.4
				2309	11.7
13 F	0014	11.1	28 Sa	0625	0.2
	0736	0.7		1334	8.6
	1451	6.8		1831	6.8
	1918	6.6		2351	11.7
14 Sa	0049	10.7	29 Su	0718	-1.3
	0810	0.2		1600	9.7
	1555	9.8		1921	7.8
	2031	7.4			
15 Su	0123	10.4	30 M	0037	11.8
	0848	-0.8		0809	-2.5
	1644	10.6		1604	10.8
	2134	7.8		2035	8.2

JULY 2008

Day	Time h.m.	Ht. ft.	Day	Time h.m.	Ht. ft.
1 Tu	0127	11.6	16 W	0214	9.6
	0858	-3.4		0928	-1.3
	1634	11.6		1736	11.9
	2140	8.2		2252	7.7
2 W	0220	11.6	17 Th	0257	9.6
	0945	-3.9		1005	-1.6
	1726	12.0		1800	11.9
	2238	7.9		2319	7.4
3 Th	0316	11.4	18 F	0338	9.6
	1034	-4.0		1042	-1.7
	1821	12.2		1841	11.4
	2332	7.3		2347	7.0
4 F	0412	11.0	19 Sa	0420	9.6
	1123	-3.6		1118	-1.7
	1906	12.3		1843	11.5
5 Sa	0026	6.6	20 Su	0018	6.4
	0510	10.5		0503	9.5
	1209	-2.9		1154	-1.4
	1937	12.3		1907	11.7
6 Su	0120	5.8	21 M	0054	5.7
	0611	9.6		0550	8.3
	1254	-1.7		1231	-0.7
	2013	12.2		1933	11.9
7 M	0215	4.9	22 Tu	0133	4.7
	0711	9.0		0643	8.0
	1339	-0.2		1308	0.4
	2047	12.1		2000	12.0
8 Tu	0311	4.0	23 W	0216	3.7
	0824	8.3		0742	8.6
	1426	1.9		1347	1.8
	2121	11.9		2040	12.0
9 W	0407	3.0	24 Th	0303	2.9
	0944	7.7		0851	9.3
	1512	3.9		1429	3.3
	2156	11.5		2102	11.8
10 Th	0502	2.1	25 F	0354	1.4
	1122	7.6		1013	9.6
	1607	5.4		1518	5.2
	2232	11.1		2138	11.6
11 F	0556	1.3	26 Sa	0450	0.4
	1318	8.2		1153	9.4
	1722	6.9		1621	6.9
	2311	10.6		2221	11.4
12 Sa	0649	0.8	27 Su	0549	-0.6
	1450	9.3		1346	8.2
	1802	7.8		1749	8.0
	2334	10.1		2313	11.2
13 Su	0729	0.0	28 M	0649	-1.5
	1549	10.1		1509	10.5
	2032	8.8		1925	8.4
14 M	0041	9.8	29 Tu	0014	11.0
	0811	0.5		0746	-2.0
	1633	10.7		1601	10.9
	2137	8.1		2042	8.1
15 Tu	0128	9.8	30 W	0118	11.0
	0830	-0.9		0842	-2.6
	1707	11.1		1643	11.5
	2226	7.9		2141	7.6
			31 Th	0220	11.0
				0933	-3.0
				1718	11.7
				2231	6.8

AUGUST 2008

Day	Time h.m.	Ht. ft.	Day	Time h.m.	Ht. ft.
1 F	0319	10.9	16 Sa	0394	9.7
	1021	-2.6		1019	-1.0
	1751	11.9		1729	11.2
	2317	5.9		2306	5.4
2 Sa	0416	10.7	17 Su	0417	9.8
	1106	-2.3		1054	-0.7
	1821	12.0		1746	11.4
				2339	4.5
3 Su	0002	5.0	18 M	0502	9.9
	0512	10.4		1139	-0.1
	1149	-1.8		1812	11.6
	1850	12.0			
4 M	0047	4.0	19 Tu	0014	3.4
	0609	9.8		0551	9.8
	1231	0.0		1207	0.8
	1918	11.9		1837	11.7
5 Tu	0132	3.2	20 W	0052	2.3
	0706	9.3		0644	9.7
	1311	1.6		1245	2.2
	1948	11.7		1905	11.8
6 W	0219	2.4	21 Th	0135	1.3
	0811	8.8		0743	9.5
	1353	3.0		1326	3.7
	2019	11.3		1935	11.7
7 Th	0304	1.8	22 F	0221	0.4
	0923	8.4		0850	9.3
	1438	3.9		1411	5.3
	2053	10.8		2010	11.4
8 F	0352	1.4	23 Sa	0314	-0.1
	1052	8.4		1016	9.1
	1533	4.6		1507	6.7
	2130	10.5		2059	11.0
9 Sa	0446	1.1	24 Su	0413	-0.5
	1250	9.7		1158	9.3
	1659	5.7		1626	7.8
	2214	9.7		2148	10.5
10 Su	0543	0.9	25 M	0519	-0.8
	1424	9.4		1346	9.6
	1912	6.1		1814	8.2
	2310	9.2		2257	10.1
11 M	0641	0.6	26 Tu	0638	-1.1
	1521	10.1		1491	10.5
	2037	7.9		1948	7.7
12 Tu	0013	9.0	27 W	0015	10.0
	0733	0.2		0733	-1.4
	1558	10.8		1535	11.0
	2124	7.5		2049	8.9
13 W	0113	9.0	28 Th	0128	10.1
	0822	-0.3		0830	-1.5
	1629	10.8		1609	11.3
	2155	7.2		2136	9.9
14 Th	0203	8.8	29 F	0238	10.3
	0904	0.1		0920	-1.4
	1652	10.9		1638	11.5
	2219	6.7		2217	4.8
15 F	0251	9.5	30 Sa	0331	10.4
	0943	-0.9		1005	-0.9
	1711	11.0		1704	11.8
	2242	6.2		2255	3.8
			31 Su	0425	10.4
				1047	-0.1
				1738	11.6
				2333	2.8

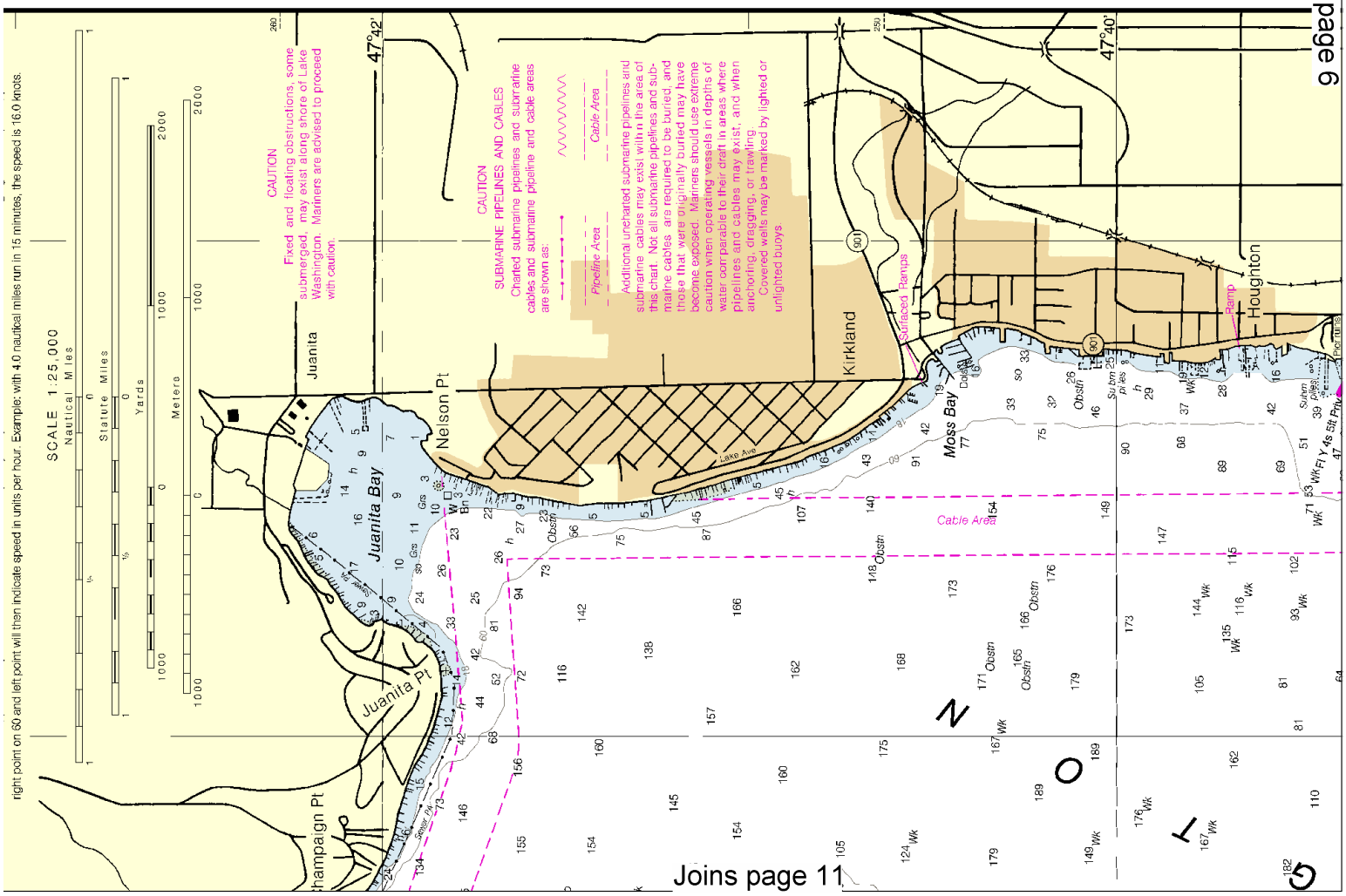
Time meridian 20 W. 0000 is midnight, 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SEPTEMBER 2008

Day	Time h.m.	Ht. ft.	Day	Time h.m.	Ht. ft.
1 M	0517	10.3	16 Tu	0503	10.5
	1127	1.0		1105	2.1
	1753	11.6		1712	11.5
				2327	0.7
2 Tu	0610	1.9	17 W	0564	10.7
	0809	10.1		1145	3.3
	1207	2.4		1740	11.6
	1819	11.3			
3 W	0647	1.2	18 Th	0016	-0.4
	0702	9.9		0647	10.7
	1247	3.8		1227	4.5
	1846	11.0		1810	11.5
4 Th	0125	9.8	19 F	0100	-1.1
	0758	8.7		0746	10.6
	1329	5.1		1314	5.8
	1916	10.5		1845	11.2
5 F	0206	0.6	20 Sa	0148	-1.4
	0859	9.5		0853	10.4
	1416	6.4		1406	6.8
	1949	9.9		1926	10.8
6 Sa	0250	0.7	21 Su	0242	-1.3
	1013	9.3		1014	10.2
	1518	7.3		1519	7.6
	2028	9.3		2018	10.1
7 Su	0342	0.9	22 M	0344	-0.9
	1152	9.3		1152	10.2
	1705	7.9		1639	7.9
	2130	8.7		2131	9.5
8 M	0442	1.1	23 Tu	0454	-0.5
	1327	9.6		1314	10.5
	1924	7.7		1647	7.3
	2233	8.4		2300	9.0
9 Tu	0549	1.1	24 W	0607	-0.2
	1426	10.0		1410	10.8
	2022	7.2		1995	6.2
	2351	8.2			
10 W	0632	0.9	25 Th	0029	9.0
	1503	10.3		0715	0.0
	2054	6.6		1450	11.1
				2042	5.0
11 Th	0059	8.5	26 F	0146	9.3
	0747	0.6		0813	0.9
	1529	10.5		1521	11.3
	2118	6.0		2121	3.7
12 F	0156	8.9	27 Sa	0250	9.7
	0832	0.3		0902	0.9
	1549	10.7		1546	11.4
	2138	5.2		2156	2.5
13 Sa	0244	9.3	28 Su	0347	10.1
	0912	0.3		0941	1.7
	1606	10.9		1609	11.3
	2202	4.3		2229	1.5
14 Su	0330	9.6	29 M	0438	10.3
	0950	0.6		1033	2.7
	1628	11.1		1631	11.2
	2229	3.1		2301	0.6
15 M	0416	10.1	30 Tu	0526	10.5
	1027	1.2		1108	3.8
	1647	11.4		1654	11.2
	2301	1.9		2333	0.0

OCTOBER 200

Day	Time h.m.	Ht. ft.
1 W	0612	10.7
	1148	4.9
	1720	10.9
2 Th	0005	-0.4
	0658	10.7
	1230	5.9
	1748	10.3
3 F	0040	-0.5
	0746	10.7
	1315	6.7
	1818	9.8
4 Sa	0119	-0.4
	0837	10.5
	1408	7.3
	1851	9.2
5 Su	0201	0.0
	0937	10.2
	1516	7.8
	1931	8.8
6 M	0250	0.5
	1049	10.0
	1719	7.7
	2029	8.0
7 Tu	0348	1.0
	1206	10.0
	1906	7.8
	2155	7.8
8 W	0454	1.4
	1304	10.2
	1946	9.5
	2353	7.8
9 Th	0559	1.8
	1343	10.4
	2011	9.7
10 F	0039	7.9
	0659	2.1
	1411	10.6
	2033	4.7
11 Sa	0142	8.5
	0749	1.9
	1435	10.9
	2055	2.9
12 Su	0237	9.2
	0835	2.3
	1457	11.1
	2122	2.1
13 M	0326	9.9
	0916	3.0
	1520	11.4
	2153	0.6
14 Tu	0417	10.6
	1000	3.8
	1547	11.6
	2227	0.0
15 W	0507	11.2
	1143	4.8
	1616	11.7
	2303	-1.9



This BookletChart was reduced to 75% of the original chart scale.
The new scale is 1:13333. Barscales have also been reduced and are accurate when used to measure distances in this BookletChart.

SEATTLE, WASHINGTON, 2008

Predicted times and heights of high and low water-Pacific Standard Time. For Daylight Saving time, add 1 hour.
To predict local tide, apply the time difference listed in the facility tabulations to these tide predictions.

SEPTEMBER 2008

Day	Time h.m.	Ht. ft.	Day	Time h.m.	Ht. ft.
1 M	0517	10.3	16 Tu	0503	10.5
	1127	1.0		1105	2.1
	1753	11.5		1712	11.5
				2337	0.7
2 Tu	0010	1.9	17 W	0554	10.7
	0609	10.1		1145	3.3
	1207	2.4		1740	11.6
	1819	11.3			
3 W	0047	1.2	18 Th	0016	-0.4
	0702	9.9		0647	10.7
	1247	3.8		1227	4.5
	1846	11.0		1810	11.5
4 Th	0125	0.8	19 F	0100	-1.1
	0758	9.7		0746	10.6
	1329	5.1		1314	5.8
	1916	10.5		1845	11.2
5 F	0206	0.6	20 Sa	0148	-1.4
	0859	9.5		0853	10.4
	1416	6.4		1408	6.8
	1949	9.9		1926	10.8
6 Sa	0250	0.7	21 Su	0242	-1.3
	1013	9.3		1014	10.2
	1518	7.3		1519	7.6
	2028	9.3		2019	10.1
7 Su	0342	0.9	22 M	0344	-0.9
	1152	9.3		1152	10.2
	1705	7.9		1659	7.9
	2120	8.7		2131	9.5
8 M	0442	1.1	23 Tu	0454	-0.5
	1327	9.6		1314	10.5
	1924	7.7		1847	7.3
	2233	8.3		2300	9.0
9 Tu	0549	1.1	24 W	0607	-0.2
	1426	10.0		1410	10.8
	2022	7.2		1955	6.2
	2351	8.2			
10 W	0652	0.9	25 Th	0029	9.0
	1503	10.3		0715	0.0
	2054	6.6		1450	11.1
				2042	5.0
11 Th	0059	8.5	26 F	0148	9.3
	0747	0.6		0813	0.3
	1529	10.5		1521	11.3
	2118	6.0		2121	3.7
12 F	0156	8.9	27 Sa	0250	9.7
	0832	0.3		0902	0.9
	1549	10.7		1546	11.4
	2138	5.2		2158	2.5
13 Sa	0244	9.3	28 Su	0347	10.1
	0912	0.3		0947	1.7
	1606	10.9		1609	11.3
	2202	4.3		2229	1.5
14 Su	0330	9.8	29 M	0438	10.3
	0950	0.6		1029	2.7
	1626	11.1		1631	11.3
	2229	3.1		2301	0.6
15 M	0416	10.1	30 Tu	0528	10.5
	1027	1.2		1108	3.8
	1647	11.4		1654	11.1
	2301	1.9		2333	0.0

OCTOBER 2008

Day	Time h.m.	Ht. ft.	Day	Time h.m.	Ht. ft.
1 W	0612	10.7	16 Th	0558	11.6
	1148	4.9		1129	5.7
	1720	10.8		1648	11.6
				2347	-2.6
2 Th	0005	-0.4	17 F	0652	11.7
	0658	10.7		1217	6.6
	1230	5.9		1725	11.4
	1748	10.3			
3 F	0040	-0.5	18 Sa	0033	-2.8
	0746	10.7		0750	11.6
	1315	6.7		1312	7.2
	1818	9.8		1807	10.9
4 Sa	0118	-0.4	19 Su	0123	-2.5
	0837	10.5		0855	11.4
	1408	7.3		1417	7.7
	1651	9.2		1858	10.2
5 Su	0201	0.0	20 M	0218	-1.8
	0937	10.2		1008	11.2
	1516	7.7		1540	7.7
	1931	8.6		2004	9.4
6 M	0250	0.5	21 Tu	0320	-0.9
	1049	10.0		1123	11.1
	1719	7.7		1721	7.1
	2029	8.0		2130	8.6
7 Tu	0348	1.0	22 W	0428	0.1
	1206	10.0		1226	11.1
	1906	7.2		1843	5.9
	2155	7.6		2309	8.2
8 W	0454	1.4	23 Th	0539	1.0
	1304	10.2		1315	11.3
	1946	6.5		1939	4.5
	2323	7.6			
9 Th	0559	1.6	24 F	0044	8.3
	1343	10.4		0648	1.9
	2011	5.7		1353	11.4
				2022	3.0
10 F	0039	7.9	25 Sa	0205	8.9
	0659	1.7		0748	2.7
	1411	10.8		1423	11.4
	2033	4.7		2059	1.7
11 Sa	0142	8.5	26 Su	0311	9.5
	0749	1.9		0842	3.6
	1435	10.9		1449	11.4
	2055	3.5		2131	0.8
12 Su	0237	9.2	27 M	0407	10.2
	0835	2.3		0929	4.6
	1457	11.1		1512	11.2
	2122	2.1		2201	-0.3
13 M	0328	9.9	28 Tu	0455	10.7
	0918	3.0		1014	5.5
	1521	11.4		1536	11.0
	2153	0.6		2230	-0.9
14 Tu	0417	10.6	29 W	0539	11.1
	1000	3.8		1058	6.3
	1547	11.6		1802	10.7
	2227	-0.8		2259	-1.3
15 W	0507	11.2	30 Th	0619	11.4
	1043	4.8		1141	6.9
	1616	11.7		1629	10.3
	2305	-1.9		2331	-1.4
			31 F	0657	11.5
				1225	7.4
				1859	9.9

NOVEMBER 2008

Day	Time h.m.	Ht. ft.	Day	Time h.m.	Ht. ft.
1 Sa	0005	1.3	16 Su	0014	3.6
	0737	11.4		0751	12.4
	1311	7.7		1313	7.9
	1731	9.4		1748	10.8
2 Su	0043	-1.0	17 M	0105	-2.9
	0820	11.3		0847	12.3
	1404	7.8		1421	7.6
	1807	8.9		1848	10.0
3 M	0125	-0.5	18 Tu	0158	-1.9
	0908	11.1		0944	12.1
	1508	7.8		1540	7.0
	1850	8.4		2002	9.0
4 Tu	0212	0.1	19 W	0255	-0.5
	1000	10.9		1038	11.9
	1634	7.5		1703	5.9
	1950	7.8		2130	8.2
5 W	0303	0.8	20 Th	0356	1.0
	1053	10.8		1128	11.8
	1757	6.8		1813	4.5
	2115	7.4		2312	7.8
6 Th	0359	1.5	21 F	0502	2.6
	1140	10.9		1212	11.8
	1842	5.9		1908	3.0
	2247	7.2			
7 F	0459	2.3	22 Sa	0055	8.1
	1219	11.0		0611	4.0
	1913	4.8		1249	11.7
				1952	1.6
8 Sa	0013	7.5	23 Su	0223	8.9
	0600	3.0		0720	5.3
	1252	11.2		1322	11.5
	1941	3.3		2029	0.4
9 Su	0128	8.2	24 M	0332	9.9
	0659	3.9		0824	6.3
	1322	11.4		1353	11.3
	2011	1.8		2102	-0.5
10 M	0233	9.2	25 Tu	0426	10.8
	0754	4.7		0922	7.0
	1351	11.6		1422	11.0
	2044	0.1		2132	-1.1
11 Tu	0330	10.2	26 W	0512	11.4
	0846	5.6		1014	7.6
	1422	11.8		1451	10.7
	2120	-1.4		2202	-1.5
12 W	0422	11.2	27 Th	0550	11.8
	0937	6.4		1100	7.9
	1454	11.9		1521	10.4
	2159	-2.7		2233	-1.7
13 Th	0513	11.9	28 F	0624	12.0
	1027	7.1		1144	8.1
	1530	11.9		1554	10.1
	2241	-3.5		2306	-1.7
14 F	0604	12.3	29 Sa	0655	12.0
	1119	7.5		1224	8.1
	1610	11.9		1629	9.8
	2326	-3.9		2342	-1.5
15 Sa	0657	12.5	30 Su	0726	12.0
	1213	7.8		1305	8.0
	1656	11.4		1706	9.4

DECEMBER 2008

Day	Time h.m.	Ht. ft.	Day	Time h.m.	Ht. ft.
1 M	0020	1.2	16 Tu	0048	2.6
	0800	11.9		0822	12.8
	1348	7.8		1408	6.7
	1747	9.1		1848	9.9
2 Tu	0100	-0.8	17 W	0138	-1.3
	0837	11.8		0904	12.7
	1437	7.5		1514	5.8
	1834	8.6		2000	9.0
3 W	0141	-0.2	18 Th	0228	0.4
	0915	11.8		0948	12.5
	1531	7.0		1621	4.6
	1933	8.0		2124	8.2
4 Th	0224	0.7	19 F	0320	2.3
	0953	11.8		1026	12.3
	1627	6.2		1725	3.3
	2047	7.5		2305	7.8
5 F	0311	1.8	20 Sa	0418	4.3
	1030	11.7		1105	12.0
	1719	5.1		1822	2.1
	2214	7.3			
6 Sa	0401	3.1	21 Su	0101	8.3
	1106	11.8		0529	6.1
	1805	3.7		1144	11.7
	2347	7.5		1911	1.0
7 Su	0500	4.6	22 M	0238	9.3
	1141	11.8		0655	7.4
	1847	2.1		1223	11.3
				1953	0.1
8 M	0117	8.3	23 Tu	0345	10.5
	0606	5.9		0820	8.1
	1216	11.9		1303	10.9
	1928	0.4		2030	-0.5
9 Tu	0236	9.5	24 W	0435	11.3
	0715	7.0		0929	8.4
	1253	12.0		1342	10.6
	2010	-1.1		2105	-1.0
10 W	0339	10.7	25 Th	0515	11.9
	0821	7.8		1023	8.4
	1332	12.1		1421	10.3
	2053	-2.5		2139	-1.2
11 Th	0432	11.7	26 F	0548	12.1
	0922	8.2		1106	8.3
	1415	12.1		1500	10.1
	2137	-3.5		2214	-1.4
12 F	0520	12.4	27 Sa	0616	12.2
	1018	8.4		1141	8.2
	1501	12.1		1540	10.0
	2223	-4.0		2248	-1.4
13 Sa	0607	12.7	28 Su	0641	12.2
	1113	8.3		1211	8.0
	1552	11.9		1619	9.9
	2311	-4.0		2324	-1.4
14 Su	0653	12.9	29 M	0705	12.2
	1208	8.0		1242	7.7
	1646	11.5		1700	9.7
	2359	-3.6			
15 M	0738	12.9	30 Tu	0000	-1.2
	1306	7.4		0730	12.3
	1744	10.8		1317	7.2
				1743	9.4
			31 W	0037	-0.7
				0758	12.3
				1355	6.6

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SEATTLE, WASHINGTON, 2009

Predicted times and heights of high and low water-Pacific Standard Time. For Daylight Saving time, add 1 hour.
To predict local tide, apply the time difference listed in the facility tabulations to these tide predictions.

JANUARY 2009

Day	Time h.m.	Ht. ft.	Day	Time h.m.	Ht. ft.
1 Th	0111	0.3	16 F	0158	2.0
	0819	12.3		0846	12.7
	1431	5.6		527	2.9
	1927	8.6		2115	8.6
2 F	0148	1.5	17 Sa	0245	3.9
	0849	12.3		0921	12.3
	1517	4.6		623	2.2
	2032	8.1		2248	8.4
3 Sa	0228	2.9	18 Su	0338	5.9
	0921	12.2		000	11.8
	1607	3.5		719	1.5
	2151	7.9			
4 Su	0311	4.6	19 M	0048	8.8
	0955	12.1		0451	7.5
	1659	2.3		043	11.2
	2326	8.1		815	1.0
5 M	0406	6.3	20 Tu	0230	9.7
	1032	11.9		0641	9.4
	1753	1.0		131	10.6
				908	0.5
6 Tu	0117	8.8	21 W	0334	10.6
	0521	7.7		0823	8.5
	1115	11.6		225	10.2
	1847	-0.3		956	0.1
7 W	0251	10.0	22 Th	0418	11.2
	0651	8.6		0928	9.3
	1205	11.7		320	10.0
	1940	-1.5		2039	-0.2
8 Th	0351	11.1	23 F	0453	11.6
	0814	8.9		011	8.0
	1300	11.6		410	9.9
	2032	-2.5		2119	-0.5
9 F	0436	11.9	24 Sa	0520	11.7
	0920	8.7		043	7.7
	1357	11.6		455	10.0
	2122	-3.2		2155	-0.7
10 Sa	0516	12.5	25 Su	0542	11.8
	1018	8.3		109	7.3
	1455	11.8		537	10.0
	2211	-3.5		2220	-0.8
11 Su	0553	12.8	26 M	0600	11.9
	1107	7.6		134	6.9
	1553	11.7		617	10.0
	2258	-3.3		2303	-0.7
12 M	0628	13.0	27 Tu	0618	12.0
	1157	6.7		201	6.2
	1651	11.4		659	10.0
	2344	-2.6		2337	-0.3
13 Tu	0703	13.1	28 W	0639	12.2
	1248	5.8		232	5.5
	1750	10.6		742	9.8
14 W	0030	-1.5	29 Th	0011	0.4
	0737	13.1		0703	12.3
	1339	4.8		307	4.6
	1852	10.0		830	9.6
15 Th	0114	0.1	30 F	0046	1.4
	0811	13.0		0728	12.4
	1432	3.8		346	3.6
	1959	9.3		923	9.3
			31 Sa	0122	2.7
				0756	12.3
				429	2.7
				2024	9.0

FEBRUARY 2009

Day	Time h.m.	Ht. ft.	Day	Time h.m.	Ht. ft.
1 Su	0200	4.3	16 M	03 2	6.9
	0825	12.2		0902	10.9
	1517	1.8		16 5	1.2
	2137	8.8			
2 M	0242	5.9	17 Tu	00 0	9.2
	0859	11.9		0431	8.0
	1611	1.0		0946	10.2
	2310	8.8		17 4	1.2
3 Tu	0337	7.4	18 W	0157	9.8
	0940	11.6		0647	8.4
	1711	0.2		1047	9.6
				18 6	1.2
4 W	0115	9.4	19 Th	0301	10.4
	0503	8.8		0822	8.1
	1033	11.3		1157	9.2
	1615	-0.6		19 6	0.9
5 Th	0249	10.3	20 F	0342	10.8
	0652	9.0		09 2	7.6
	1139	11.1		1305	9.2
	1918	-1.3		20 0	0.6
6 F	0340	11.2	21 Sa	04 2	11.0
	0619	8.7		0946	7.1
	1250	11.1		1402	9.4
	2016	-1.9		2053	0.3
7 Sa	0418	11.8	22 Su	0435	11.2
	0819	7.9		10 1	6.5
	1356	11.2		1450	9.6
	2109	-2.3		2131	0.2
8 Su	0450	12.2	23 M	0452	11.3
	1007	6.9		1033	5.9
	1501	11.3		1533	9.9
	2156	-2.3		2206	0.2
9 M	0520	12.5	24 Tu	0507	11.4
	1052	5.8		1056	5.1
	1559	11.3		16 5	10.0
	2243	-1.8		2240	0.5
10 Tu	0549	12.7	25 W	0525	11.6
	1136	4.7		1123	4.2
	1656	11.1		1658	10.2
	2327	-0.9		23 4	1.1
11 W	0618	12.8	26 Th	0546	11.8
	1220	3.6		1154	3.1
	1753	10.8		1742	10.2
				2348	2.0
12 Th	0009	0.4	27 F	0609	11.9
	0647	12.7		1229	2.1
	1303	2.7		1830	10.2
	1851	10.3			
13 F	0051	2.0	28 Sa	0025	3.2
	0718	12.5		0635	12.0
	1348	1.9		1307	1.2
	1952	9.8		1923	10.2
14 Sa	0133	3.7			
	0750	12.1			
	1433	1.4			
	2058	9.4			
15 Su	0218	5.4			
	0824	11.6			
	1522	1.2			
	2219	9.2			

MARCH 2009

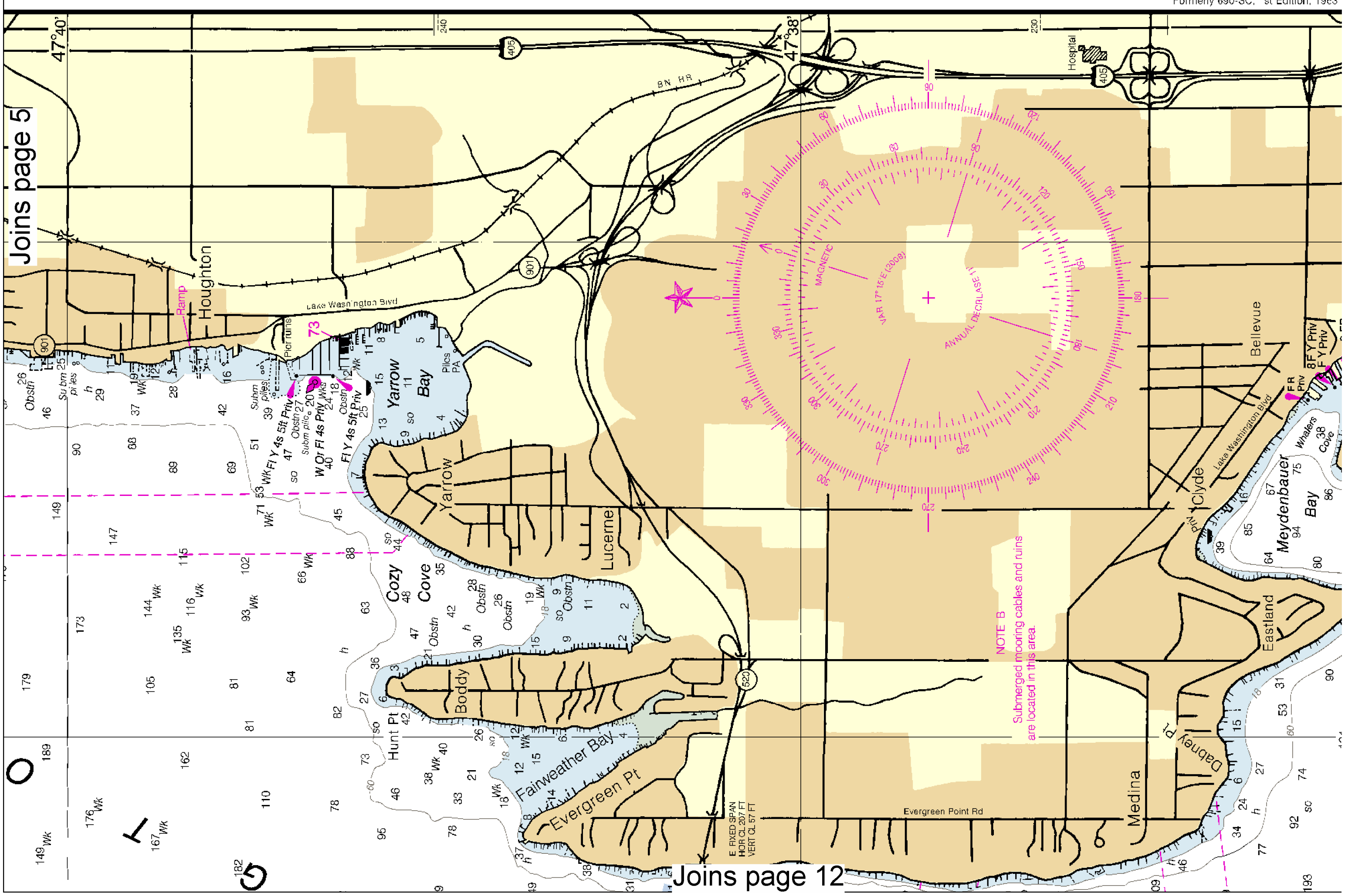
Day	Time h.m.	Ht. ft.	Day	Time h.m.	Ht. ft.
1 Su	0103	4.4	16 M	0203	6.5
	0704	11.9		0730	10.5
	1350	0.4		1428	0.3
	2022	10.0		2146	9.9
2 M	0145	5.7	17 Tu	0301	7.4
	0736	11.6		0810	9.8
	1436	0.0		1517	0.8
	2132	9.7		2309	9.7
3 Tu	0234	7.0	18 W	0429	7.9
	0813	11.2		0901	9.1
	1534	-0.2		1615	1.2
	2302	9.6			
4 W	0341	8.0	19 Th	0046	9.8
	0903	10.7		0644	7.8
	1636	-0.3		1010	8.5
				1721	1.5
5 Th	0056	9.9	20 F	0155	10.0
	0524	9.5		0759	7.2
	1012	10.3		1131	8.3
	1746	-0.5		1828	1.6
6 F	0215	10.5	21 Sa	0237	10.2
	0712	8.2		0839	6.5
	1136	10.0		1247	8.4
	1857	-0.7		1927	1.5
7 Sa	0302	11.1	22 Su	0306	10.5
	0822	7.2		0907	5.8
	1258	10.1		1349	8.7
	1959	-0.8		2016	1.4
8 Su	0337	11.5	23 M	0326	10.8
	0911	6.0		0929	4.9
	1409	10.3		1442	9.1
	2053	-0.8		2057	1.5
9 M	0407	11.8	24 Tu	0344	10.9
	0953	4.7		0951	4.0
	1512	10.6		1528	9.6
	2141	-0.3		2135	1.9
10 Tu	0433	12.0	25 W	0402	11.1
	1032	3.4		1016	2.8
	1610	10.8		1613	10.0
	2225	0.5		2212	2.5
11 W	0459	12.1	26 Th	0424	11.3
	1110	2.2		1044	1.6
	1704	10.9		1658	10.5
	2306	1.6		2249	3.2
12 Th	0526	12.1	27 F	0447	11.4
	1146	1.2		1117	0.5
	1757	10.8		1744	10.8
	2350	2.8		2328	4.2
13 F	0554	12.0	28 Sa	0514	11.5
	1226	0.5		1154	-0.5
	1850	10.7		1833	11.0
14 Sa	0032	4.1	29 Su	0009	5.1
	0624	11.6		0544	11.4
	1304	0.1		1235	-1.2
	1944	10.5		1926	11.0
15 Su	0115	5.4	30 M	0054	6.1
	0655	11.1		0617	11.2
	1344	0.1		1320	-1.5
	2041	10.2		2024	10.9
			31 Tu	0144	6.9
				0656	10.9
				1410	-1.5
				2133	10.6

APRIL 2009

Day	Time h.m.	Ht. ft.	Day	Time h.m.	Ht. ft.
1 W	0245	7.6	16 Th	0423	7.4
	0744	10.3		0822	8.2
	1507	-1.1		1525	0.8
	2254	10.4		2321	10.1
2 Th	0408	7.9	17 F	0607	7.0
	0848	9.7		0935	7.7
	1612	-0.6		1625	1.5
3 F	0018	10.5	18 Sa	0020	10.1
	0552	7.5		0711	6.3
	1014	9.1		1059	7.5
	1723	-0.1		1726	2.0
4 Sa	0122	10.8	19 Su	0105	10.2
	0715	6.4		0749	5.4
	1147	8.9		1221	7.6
	1833	0.4		1830	2.4
5 Su	0208	11.1	20 M	0138	10.4
	0810	5.1		0816	4.4
	1313	9.1		1331	8.0
	1936	0.8		1925	2.8
6 M	0243	11.4	21 Tu	0205	10.6
	0853	3.6		0840	3.2
	1428	9.5		1431	8.7
	2032	1.4		2014	3.4
7 Tu	0312	11.5	22 W	0230	10.8
	0932	2.2		0906	1.8
	1529	10.0		1524	9.4
	2122	2.2		2059	4.0
8 W	0339	11.6	23 Th	0255	11.0
	1007	0.9		0938	0.5
	1625	10.5		1613	10.2
	2207	3.2		2143	4.8
9 Th	0405	11.6	24 F	0322	11.1
	1041	-0.1		1009	-0.8
	1716	10.8		1700	10.9
	2252	4.2		2227	5.5
10 F	0432	11.4	25 Sa	0351	11.2
	1115	-0.7		1045	-1.9
	1804	11.1		1748	11.4
	2335	5.2		2312	6.2
11 Sa	0501	11.1	26 Su	0424	11.2
	1150	-1.1		1126	-2.6
	1851	11.2		1838	11.7
12 Su	0020	6.0	27 M	0000	6.8
	0532	10.6		0501	11.1
	1225	-1.1		1210	-3.0
	1937	11.1		1931	11.7
13 M	0107	6.7	28 Tu	0052	7.2
	0606	10.1		0543	10.8
	1304	-0.9		1258	-2.9
	2024	10.9		2028	11.6
14 Tu	0158	7.1	29 W	0151	7.4
	0644	9.5		0633	10.3
	1346	-0.4		1350	-2.4
	2117	10.6		2129	11.4
15 W	0259	7.4	30 Th	0301	7.4
	0727	8.9		0734	9.6
	1432	0.2		1446	-1.5
	2216	10.3		2232	11.3

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Formerly 690-SC, 1st Edition, 1963



Printed at reduced scale. SCALE 1:10,000 See Note on page 5.

Nautical Miles 0

Yards 200 0 200 400 600 800 1000 1200

North

SEATTLE, WASHINGTON, 2009

Predicted times and heights of high and low water–Pacific Standard Time. For Daylight Saving time, add 1 hour.
To predict local tide, apply the time difference listed in the facility tabulations to these tide predictions.

MAY 2009			JUNE 2009			JULY 2009			AUGUST 2009		
Day	Time h.m.	Ht. ft.	Day	Time h.m.	Ht. ft.	Day	Time h.m.	Ht. ft.	Day	Time h.m.	Ht. ft.
16 Sa	0439 0902 1534 2031	6.3 7.3 1.3 10.8	1 M	0623 1208 1726	2.7 7.7 9.6	1 W	0639 1357 1913 2354	0.4 8.6 6.8 11.1	1 Sa	0009 0735 1354 2006	8.7 -0.2 10.6 1.6
17 Su	0557 1023 1637 2341	5.4 7.0 2.3 10.8	2 Tu	0007 0714 1347 1838	11.7 1.5 8.3 5.1	2 Th	0723 1516 1945	-0.4 9.8 7.6	2 Su	0107 0853 1632 2152	9.5 -0.5 11.0 7.2
18 M	0640 1148 1728	4.3 7.1 3.4	3 W	0045 0758 1507 1949	11.5 0.0 9.3 6.2	3 F	0038 0807 1615 2102	10.6 -0.9 10.6 7.8	3 M	0201 0905 1702 2227	9.4 -0.1 11.2 6.9
19 Tu	0016 0715 1311 1836	10.8 3.0 7.8 4.4	4 Th	0123 0837 1609 2056	11.6 -0.3 10.3 6.8	4 Sa	0124 0848 1656 2200	10.2 -1.3 11.2 7.8	4 Tu	0246 0943 1755 2254	9.5 -0.6 11.1 8.5
20 W	0049 0749 1423 1926	10.9 1.6 8.5 5.3	5 F	0157 0813 1709 2155	10.9 -1.6 11.0 7.4	5 Su	0208 0925 1732 2245	10.0 -1.3 11.4 7.6	5 W	0330 1018 1843 2319	9.5 -0.8 11.1 8.0
21 Th	0131 0823 1523 2023	11.0 0.1 9.5 6.2	6 Sa	0233 0847 1754 2246	10.5 -1.9 11.4 7.6	6 M	0251 1002 1802 2322	9.8 -1.6 11.4 7.4	6 Th	0411 1051 1930 2345	9.6 -0.6 11.0 8.4
22 F	0153 0858 1616 2117	11.1 -1.3 10.5 6.8	7 Su	0308 0921 1818 2352	10.2 -2.0 11.6 7.6	7 Tu	0333 1037 1926 2353	9.6 -1.6 11.4 7.5	7 F	0451 1124 1620	9.5 -0.2 11.3
23 Sa	0227 0936 1733 2216	11.3 -2.5 11.3 7.4	8 M	0345 1058 1848	9.9 -2.0 11.6	8 W	0414 1113 1848	9.5 -1.5 11.4	8 Sa	0014 0534 1157 1842	4.6 9.4 0.5 11.4
24 Su	0305 1020 1732 2330	11.3 -3.4 11.4 7.6	9 Tu	0013 0424 1132 1917	7.6 9.6 -1.9 11.5	9 Th	0024 0456 1148 1910	6.7 9.3 -1.2 11.5	9 Su	0047 0619 1231 1907	3.8 9.2 1.4 11.5
25 M	0344 1135 1641 2354	11.3 -3.6 12.1 7.6	10 W	0052 0506 1209 1947	7.4 9.2 -1.6 11.6	10 F	0056 0539 1223 1935	6.2 9.0 -0.7 11.6	10 M	0124 0710 1307 1934	2.9 9.0 2.6 11.4
26 Tu	0424 1252 1930	11.1 -3.0 12.2	11 Th	0133 0549 1249 2018	7.1 8.9 -1.1 11.5	11 Sa	0139 0625 1258 2002	5.8 8.7 -0.1 11.7	11 Tu	0204 0808 1344 2019	2.0 8.8 4.0 11.3
27 W	0507 1402 2020	10.8 -2.5 12.2	12 F	0218 0637 1327 205	6.7 8.4 -0.5 11.5	12 Su	0211 0718 1334 2030	4.8 8.3 1.4 11.7	12 W	0248 0912 1425 2034	1.3 8.6 5.4 11.0
28 Th	0551 1511 2109	10.4 -1.6 12.1	13 Sa	0302 0731 1407 2125	6.1 7.9 -0.4 11.4	13 M	0254 0817 1410 2100	3.9 7.9 2.5 11.6	13 Th	0339 1032 1517 2113	0.6 8.4 6.7 10.8
29 F	0639 1617 1426 2157	9.9 -0.6 11.6 12.0	14 Su	0351 0836 1449 2159	5.3 7.4 -1.8 11.4	14 Tu	0339 0927 1452 2132	3.0 7.7 4.0 11.6	14 F	0437 1216 1632 2204	0.1 8.6 7.8 10.5
30 Sa	0411 0955 1531 2242	5.4 6.3 0.2 11.9	15 M	044 095 1554 2233	4.4 7.1 5.0 11.3	15 W	0429 1051 1540 2207	1.9 7.7 5.6 11.2	15 Sa	0541 1402 1814 2310	-0.6 9.5 8.3 10.3
31 Su	0521 1036 1621 2328	4.1 7.7 1.9 11.8				30 Th	0544 1350 1813 2311	0.4 9.3 7.7 10.	30 Su	0659 1512 2051	0.7 10.4 8.7
						31 F	0642 1503 1957	0. 10. 7.8	31 M	0059 0753 1546 2127	8.7 0.5 10.6 8.1

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

NOAA WEATHER RADIO BROADCASTS

CITY	STATION	FREQ. (MHz)	BROADCAST TIMES
Seattle, Wash.	KHB-60	162.55	24 hours daily
Olympia, Wash.	WXM-62	162.475	24 hours daily

MARINE WEATHER FORECASTS

NATIONAL WEATHER SERVICE	TELEPHONE NUMBER	OFFICE HOURS
Seattle, WA	(206) 526-6087	8am to 3pm M-F*

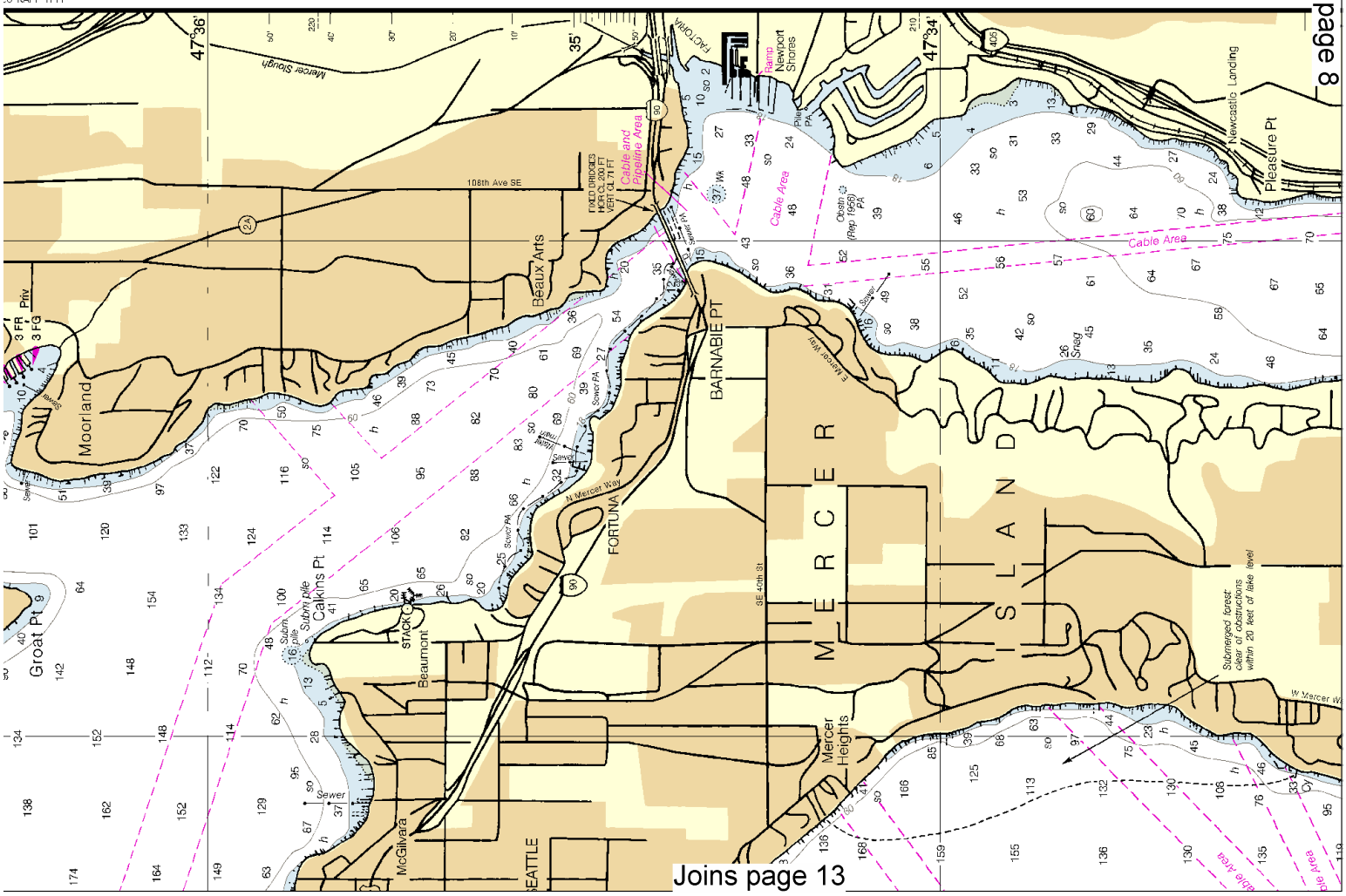
*Recorded forecasts only at other times.

BROADCASTS OF MARI

CITY	STA
Seattle, Wash.	NM

* Preceded by announcem
Distress calls for small cr
channel 16 (156.80 MHz)

33 KAPP 1711



This BookletChart has been updated with: Coast Guard Local Notice To Mariners: 0710 2/16/2010,
NGA Weekly Notice to Mariners: 0910 2/27/2010,
Canadian Coast Guard Notice to Mariners: n/a .

TIMES

HOURS
pm M-F*

BROADCASTS OF MARINE WEATHER FORECASTS AND WARNINGS BY MARINE RADIOTELEPHONE STATIONS

CITY	STATION	FREQ.	BROADCAST TIMES - PST	SPECIAL WARNING
Seattle, Wash.	NMW-43	157.1 MHz	9:30 AM	*On receipt

* Preceded by announcement on 2182 kHz and 156.8 MHz
Distress calls for small craft are made on 2182 kHz or channel 16 (156.80 MHz) VHF.

PUBLIC BOATING INSTRUCTION PROGRAMS

The United States Power Squadrons (USPS) and U.S. Coast Guard Auxiliary (USCGAUX), national organizations of boatmen, conduct extensive boating instruction programs in communities throughout the United States. For information regarding these educational courses, contact the following sources:

USPS - Local Squadron Commander or USPS Headquarters, Post Office Box 30423, Raleigh, N. C. 27612, 919-821-0281.

USCGAUX - 13th Coast Guard District, 915 Second Ave., Seattle, WA 98174-1067, Tel. 206-553-7390 or USCG Headquarters (G-BAU), Washington, D.C. 20593-0001.

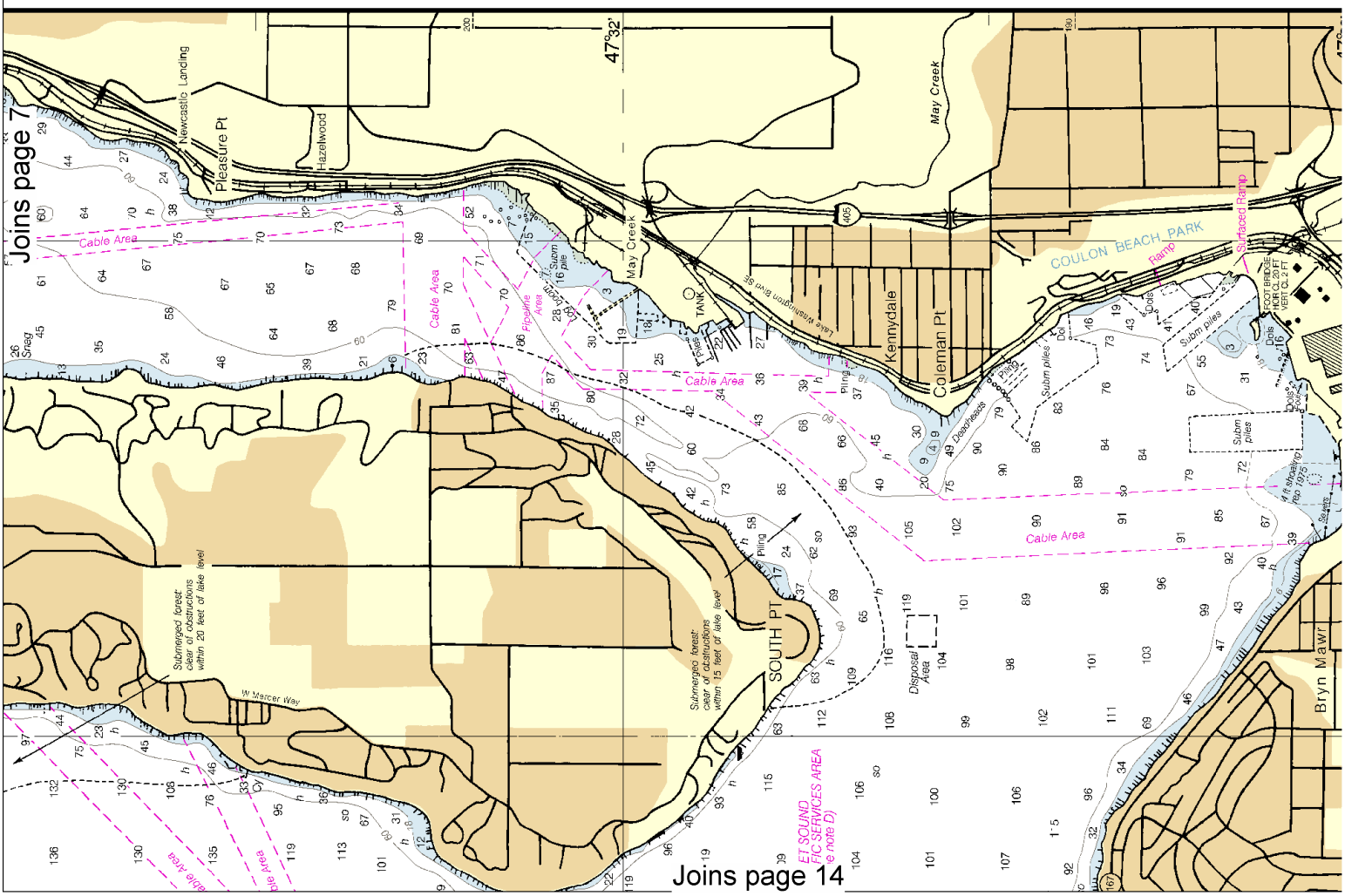
ACKNOWLEDGMENT

The National Ocean Service acknowledges the exceptional cooperation received from members of the Bellevue Power Squadron, District 16, United States Power Squadrons, in continually providing essential information for revising this char.

PRINT-ON-DEMAND CHARTS

This chart is available in a version updated weekly by NOAA for Notices to Mariners and critical corrections. Charts are printed when ordered using Print-on-Demand technology. New Editions are available 5-8 weeks before their release as traditional NOAA charts. Ask your chart agent about Print-on-Demand charts.

Additional information can be obtained at nautica charts.noaa.gov.



North

Printed at reduced scale. ~~SCALE 1:10,000~~ See Note on page 5.

Nautical Miles
0

Yards
200 0 200 400 600 800 1000 1200

HEIGHTS

Vertical clearances above the locks are referenced to Mean Water Level of the lakes which is 21 feet above MLLW.

AUTHORITIES

Hydrography and topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, and U.S. Coast Guard.

SUPPLEMENTAL INFORMATION

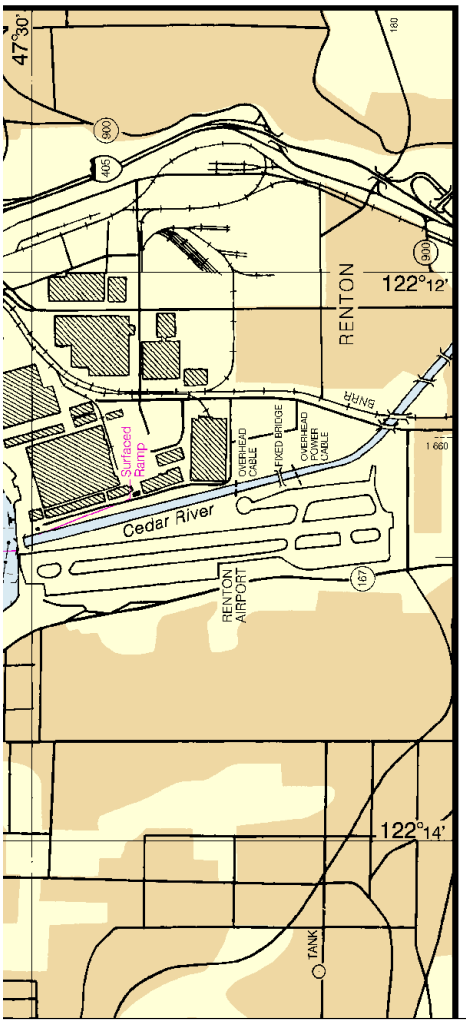
Consult U.S. Coast Pilot 7 for important supplemental information.

CAUTION

This chart has been corrected from the Notice to Mariners (NM) published weekly by the National Geospatial-Intelligence Agency and the Local Notice to Mariners (LNM) issued periodically by each U.S. Coast Guard district to the dates shown in the lower left hand corner. Chart updates corrected from Notice to Mariners published after the dates shown in the lower left hand corner are available at nauticalcharts.noaa.gov.

HORIZONTAL DATUM

The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83), which for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1927 must be corrected an average of 0.646" southward and 4.450" westward to agree with this chart.



NAUTICAL CHART 18447

THE NATION'S CHARTMAKER SINCE 1807

WASHINGTON

LAKE WASHINGTON SHIP CANAL AND LAKE WASHINGTON

Chart 18447 29th Ed., May /08 ■
Corrected through NM May 3/08, LNM Apr. 22/08
Published at Washington, D.C.
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
COAST SURVEY

MERCATOR PROJECTION AT SCALE 1:10,000 & 1:25,000

SOUNDINGS IN FEET

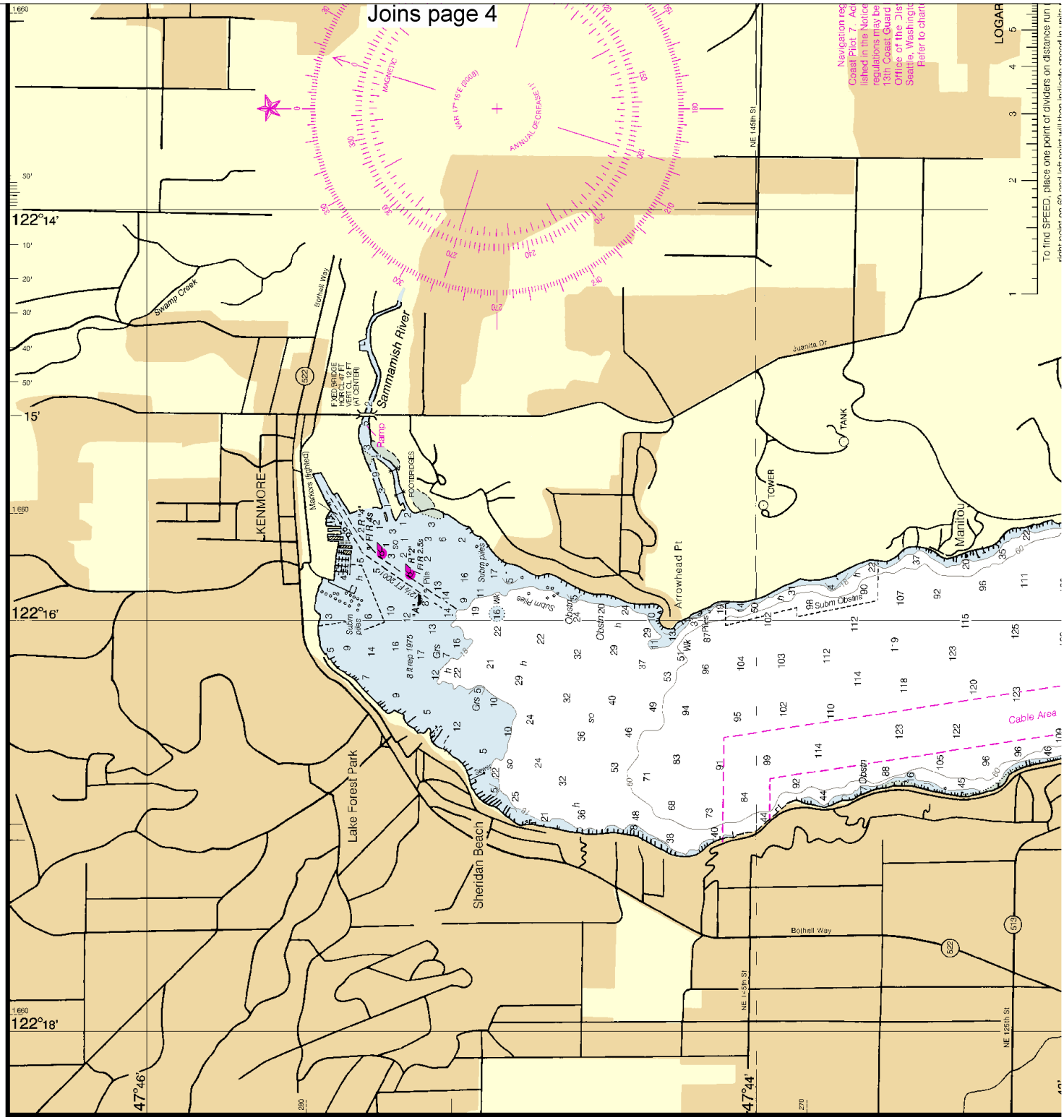
AT MEAN LOWER LOW WATER below the locks AND AT LOW WATER OF LAKE which is 20 FEET above the plane of MLLW in Puget Sound.

North American Datum of 1983
(World Geodetic System 1984)

NSN 7642014011615
NGA REFERENCE NO. 18XHA18447
ED. NO. 29

Joins page 15

Joins page 4



18447 29th Ed., May /08 Corrected through NM May 3/08, LNM Apr. 22/08

Joins page 16

10

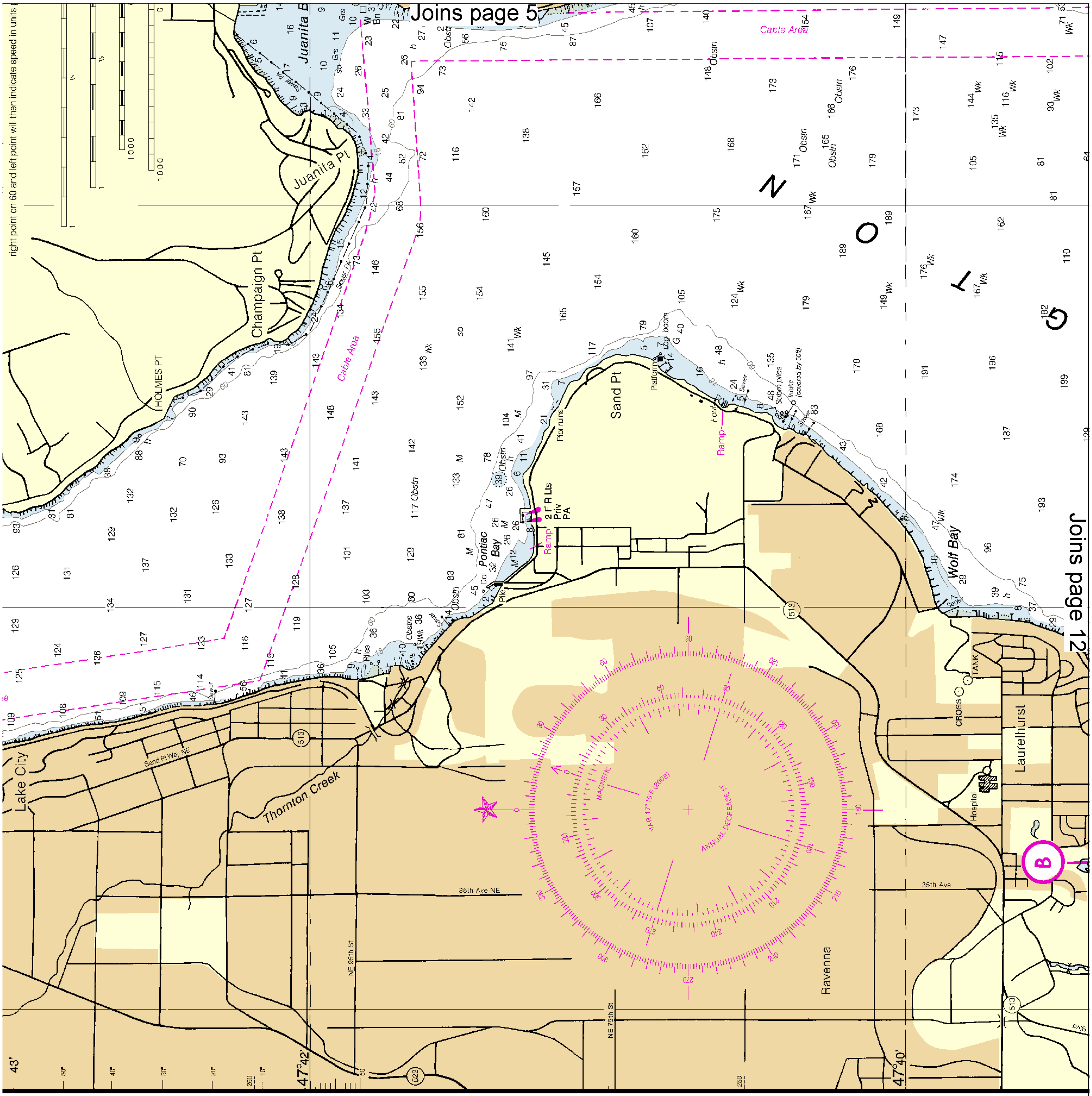
North

Printed at reduced scale. ~~SCALE 1:10,000~~ See Note on page 5.

Nautical Miles 0

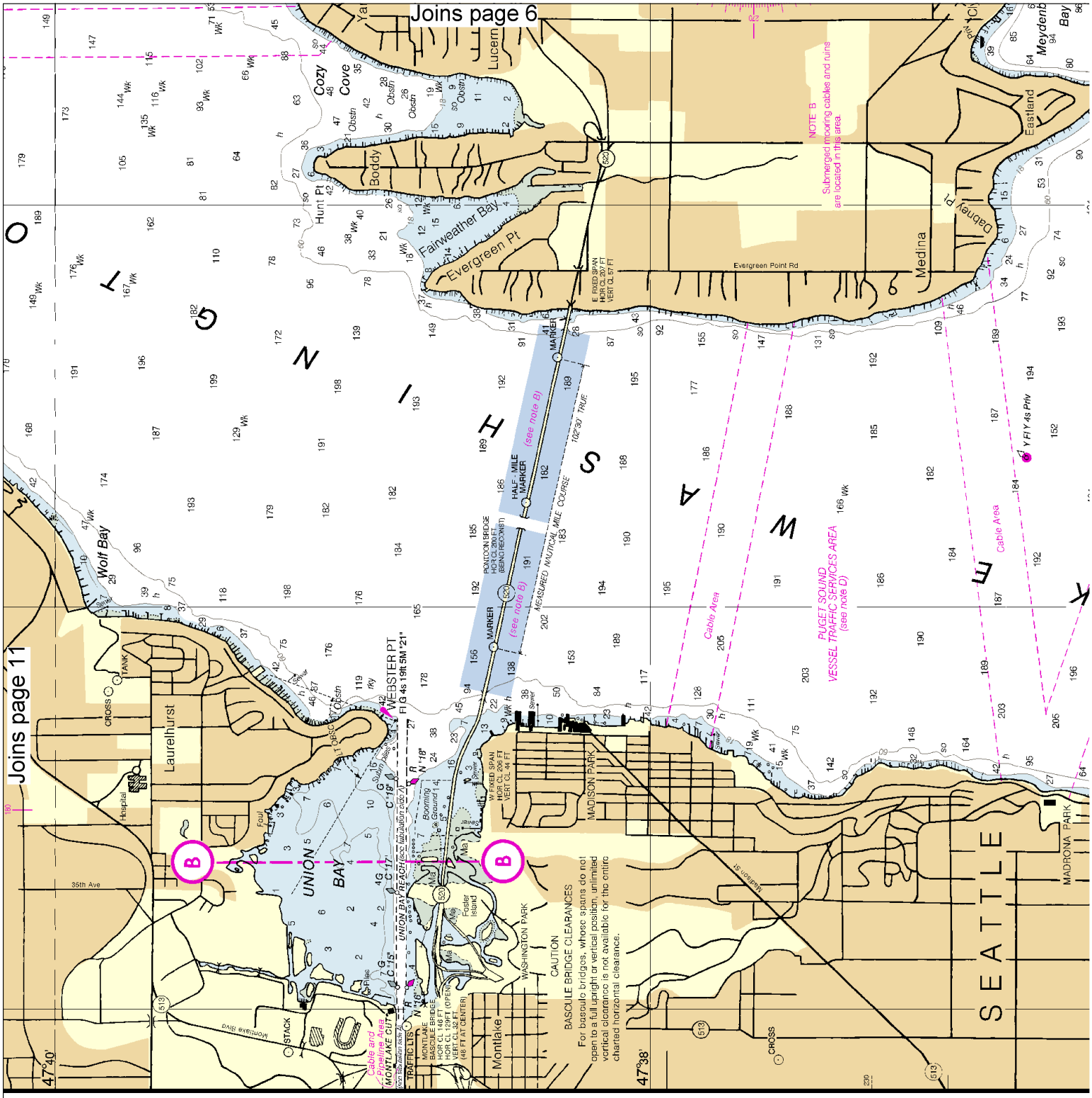
Yards 200 0 200 400 600 800 1000 1200

Joins page 5



Joins page 12

Joins page 17



North

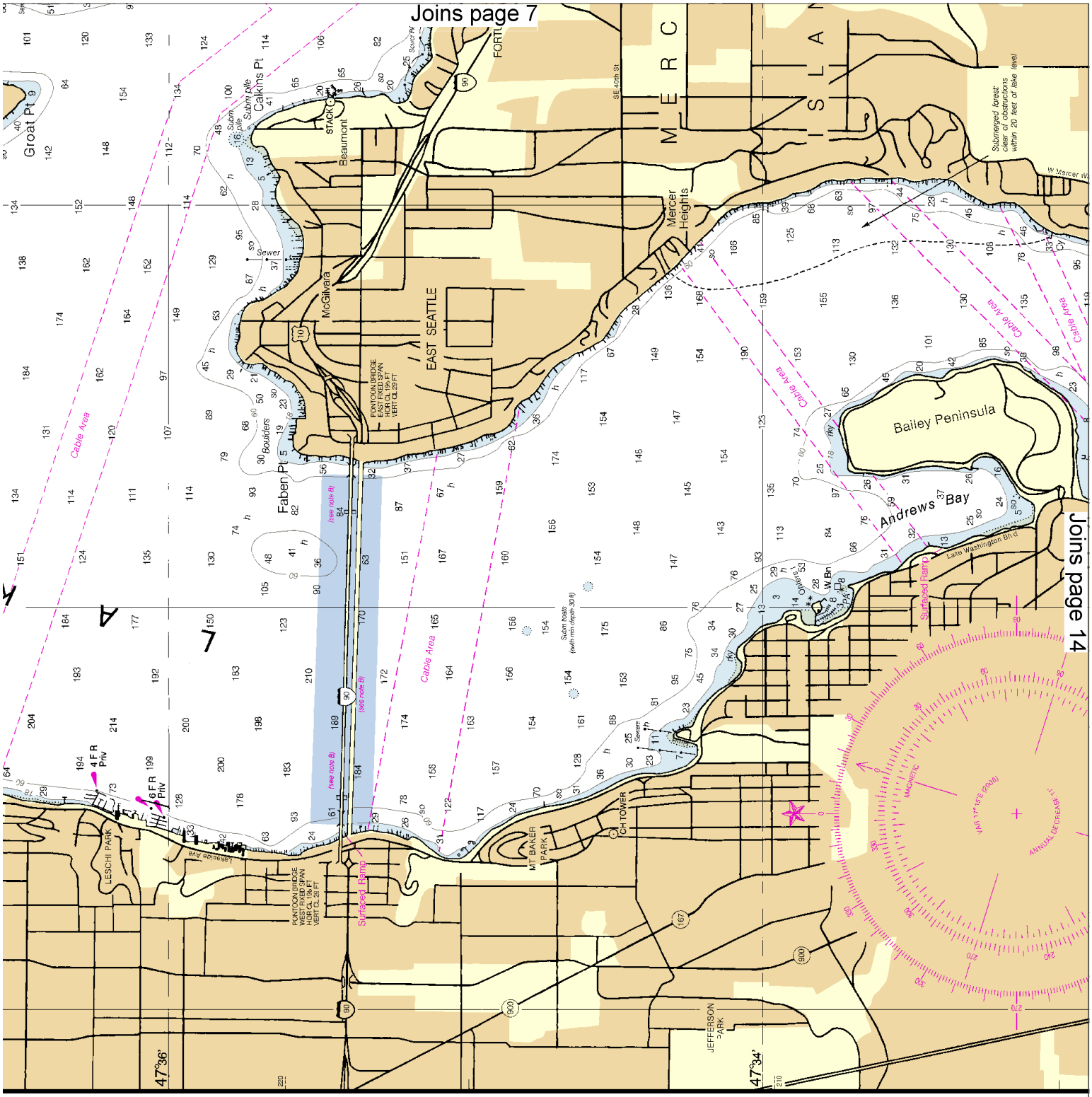
Printed at reduced scale. ~~SCALE 1:10,000~~ See Note on page 5.

Nautical Miles

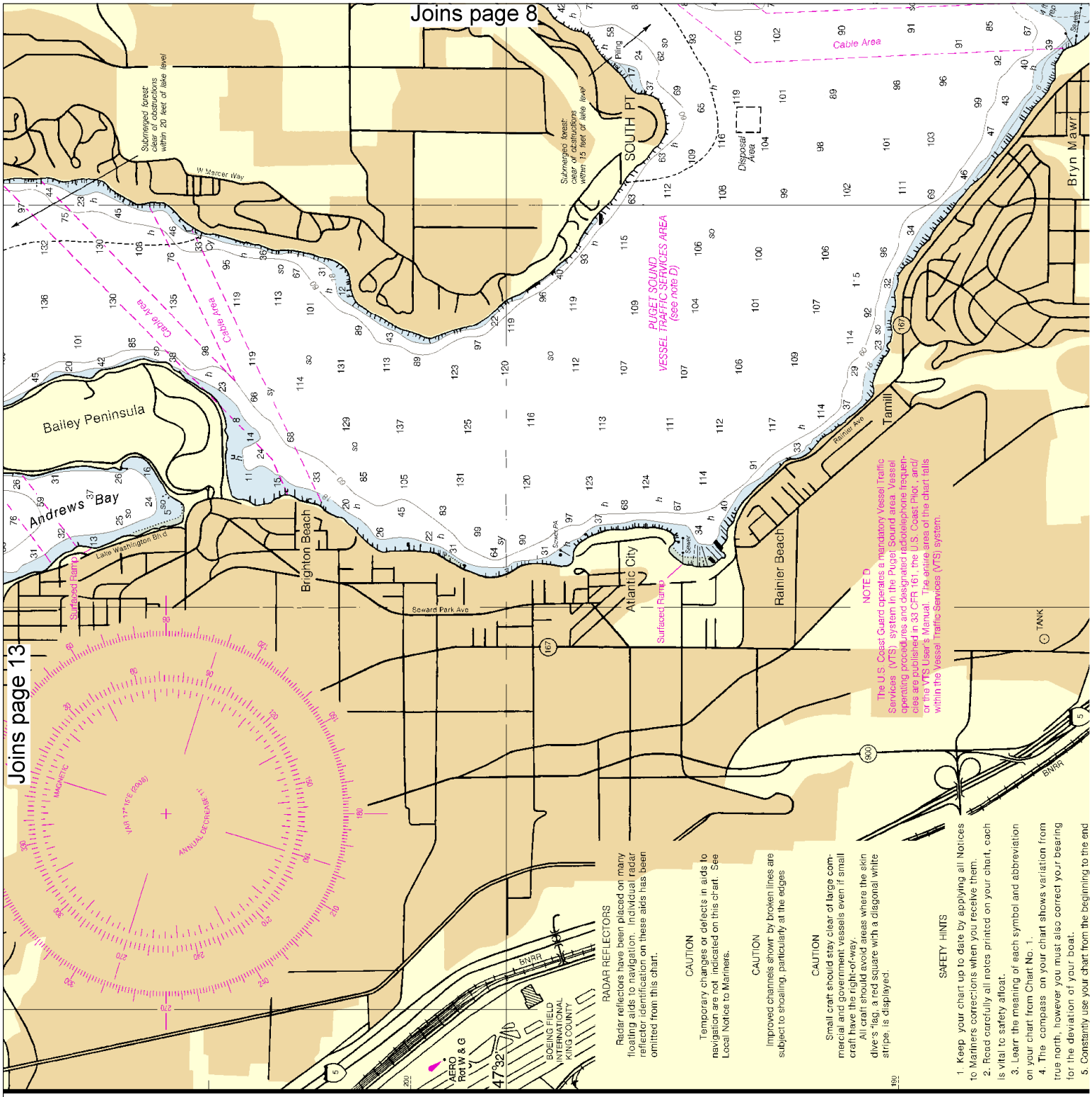
0

Yards

200 0 200 400 600 800 1000 1200


Joins page 7
Joins page 14
Joins page 19
Bailey Peninsula
Andrews Bay
Mercer Heights
EAST SEATTLE
Beaumont
McGilvra
Faben Pt
Boulders
Great Pt
Calkins Pt
Cable Area
Surfaced Ramp
LESCHI PARK
MT BAKER PARK
JEFFERSON PARK
PONTOON BRIDGE EAST FIXED SPAN HOR CL 195 FT VERT CL 25 FT
PONTOON BRIDGE WEST FIXED SPAN HOR CL 195 FT VERT CL 25 FT
Submerged forest: clear of obstructions within 20 feet of lake level
47°36'
47°34'

Joins page 8



Joins page 13

Joins page 20

North

Printed at reduced scale. ~~SCALE 1:10,000~~ See Note on page 5.

Nautical Miles 0

Yards 200 0 200 400 600 800 1000 1200

Joins page 9

Chart 18447 29th Ed., May /08 ■
Corrected through NM May 3/08, LNM Apr. 22/08
Published at Washington, D.C.
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
COAST SURVEY

MERCATOR PROJECTION AT SCALE 1:10,000 & 1:25,000

SOUNDINGS IN FEET

AT MEAN LOWER LOW WATER below the locks AND AT LOW WATER OF LAKE which is 20 FEET above the plane of MLLW in Puget Sound.

North American Datum of 1983
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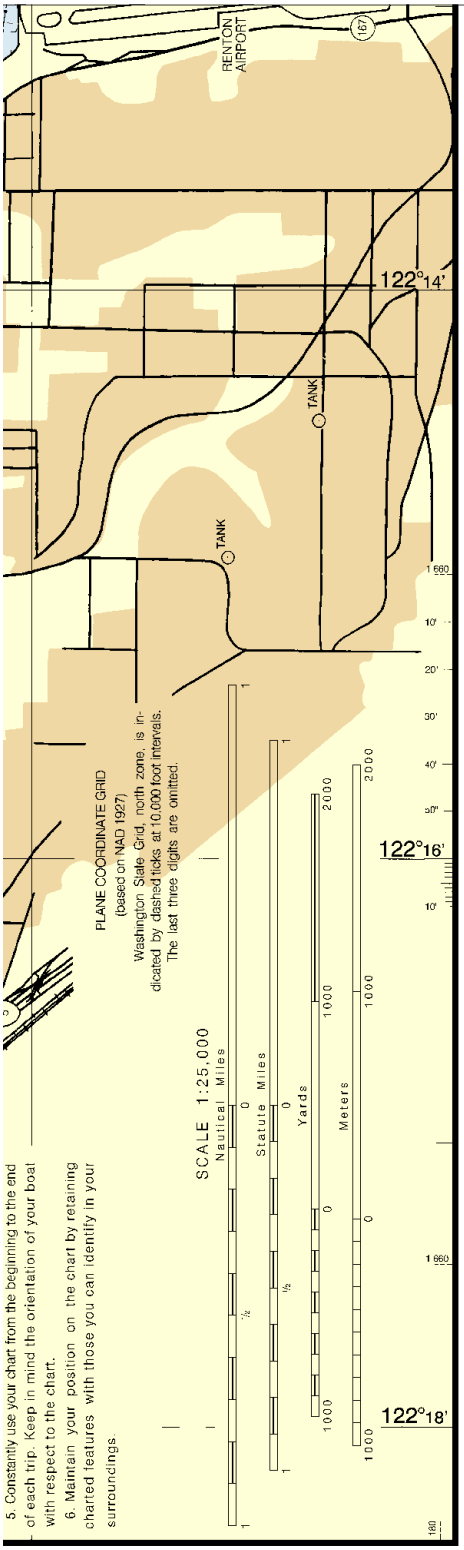
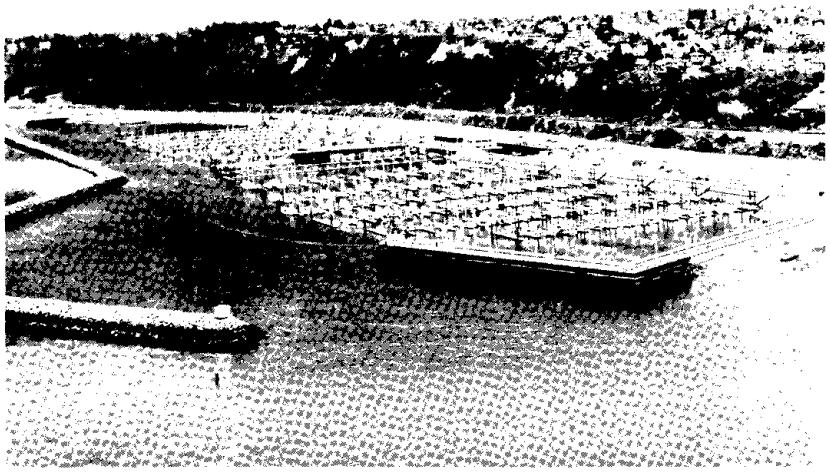
NSN 7642014011615
NGA REFERENCE No. 18XHA18447
ED. NO. 29

SIDE B



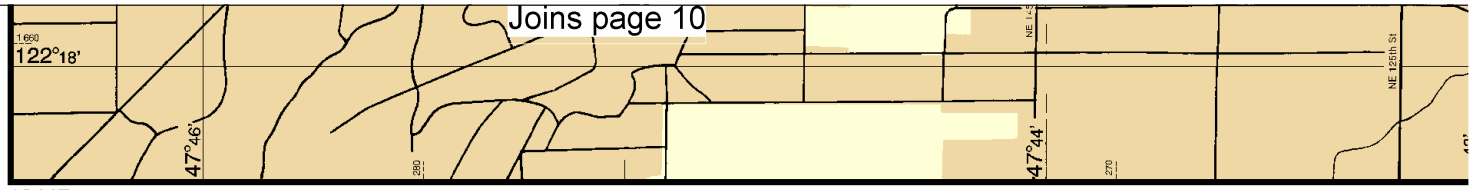


SHILSHOLE BAY

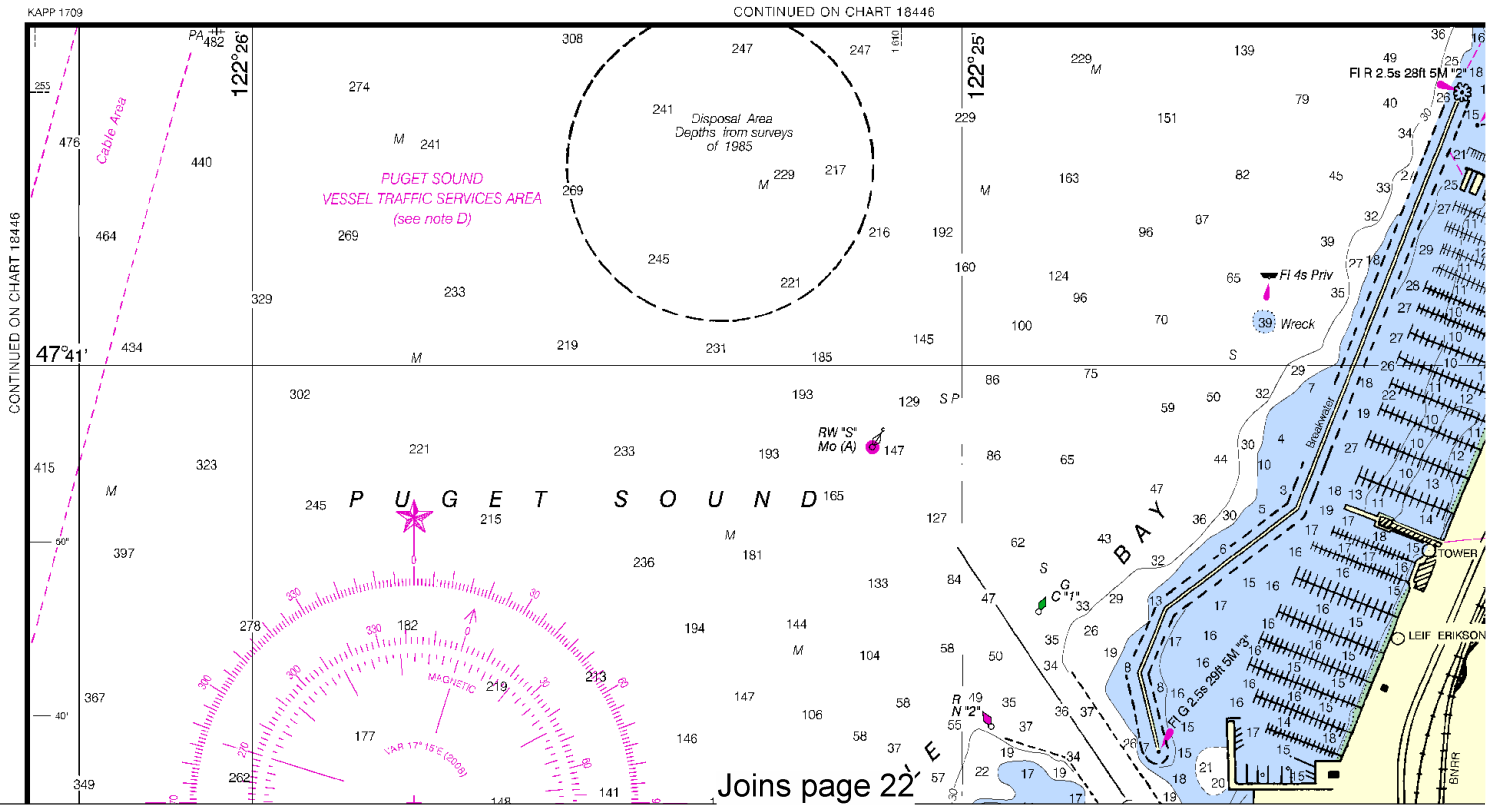
18447

Joins page 21

Joins page 10



18447 29th Ed., May /08 Corrected through NM May 3/08, LNM Apr. 22/08



Joins page 22

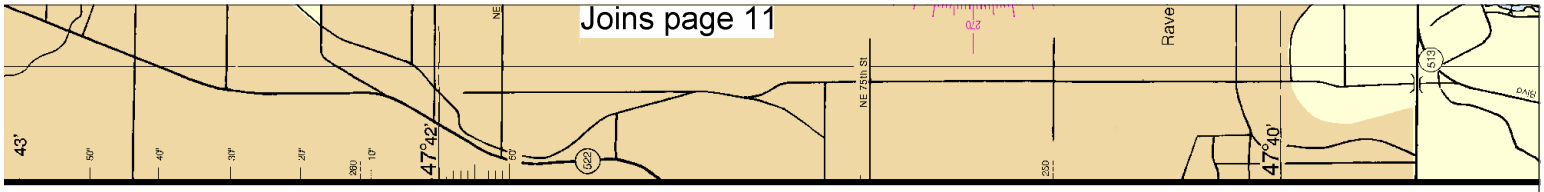
North

Printed at reduced scale. ~~SCALE 1:10,000~~ See Note on page 5.

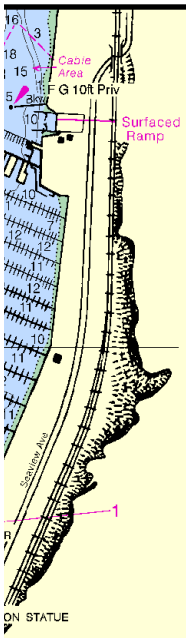
Nautical Miles
0

Yards
200 0 200 400 600 800 1000 1200

Joins page 11



Joins page 18



122°24'

NOTE D

The U.S. Coast Guard operates a mandatory Vessel Traffic Services (VTS) system in the Puget Sound area. Vessel operating procedures and designated radiotelephone frequencies are published in 33 CFR 161, the U.S. Coast Pilot, and/or the VTS User's Manual. The entire area of the chart falls within the Vessel Traffic Services (VTS) system.

RULES OF THE ROAD
(ABRIDGED)

Motorless craft have the right-of-way in almost all cases. Sailing vessels and motorboats less than sixty-five feet in length shall not hamper, in a narrow channel, the safe passage of a vessel which can navigate only inside that channel.

A motorboat being overtaken has the right-of-way.

Motorboats approaching head to head or nearly so should pass port to port.

When motorboats approach each other at right angles or obliquely, the boat on the right has the right-of-way in most cases.

Motorboats must keep to the right in narrow channels when safe and practicable.

Mariners are urged to become familiar with the complete text of the Rules of the Road in U.S. Coast Guard publication "Navigation Rules."

AIDS TO NAVIGATION

Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

CAUTION

WARNINGS CONCERNING LARGE VESSELS

The "Rules of the Road" state that recreational boats shall not impede the passage of a vessel that can navigate only within a narrow channel or fairway. Large vessels may appear to move slowly due to their large size but actually transit at speeds in excess of 12 knots, requiring a great

122°23'

RADAR REFLECTORS

Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

CAUTION

Small craft should stay clear of large commercial and government vessels even if small craft have the right-of-way.

All craft should avoid areas where the skin divers flag, a red square with a diagonal white stripe, is displayed.

CAUTION

Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.

Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

CAUTION

Mariners are warned to stay clear of the protective riprap surrounding navigational light structures shown thus: ⊙

CAUTION

Limitations on the use of radio signals as aids to marine navigation can be found in the U.S. Coast Guard Light Lists and National Geospatial-Intelligence Agency Publication 117.

Radio direction-finder bearings to commercial broadcasting stations are subject to error and should be used with caution.

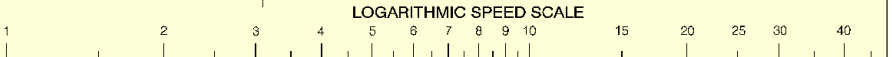
Station positions are shown thus:
⊙(Accurate location) o(Approximate location)

HEIGHTS

Vertical clearances above the locks are referenced to Mean Water Level of the lakes which is 21 feet above MLLW.

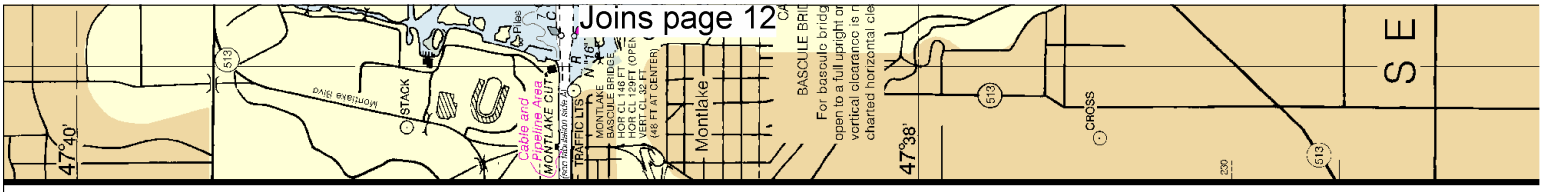
Vertical clearances for the bridge and cable at the Burlington Northern R.R. bridge (47°40', 122°24') are referenced to MHW.

LOGARITHMIC SPEED SCALE

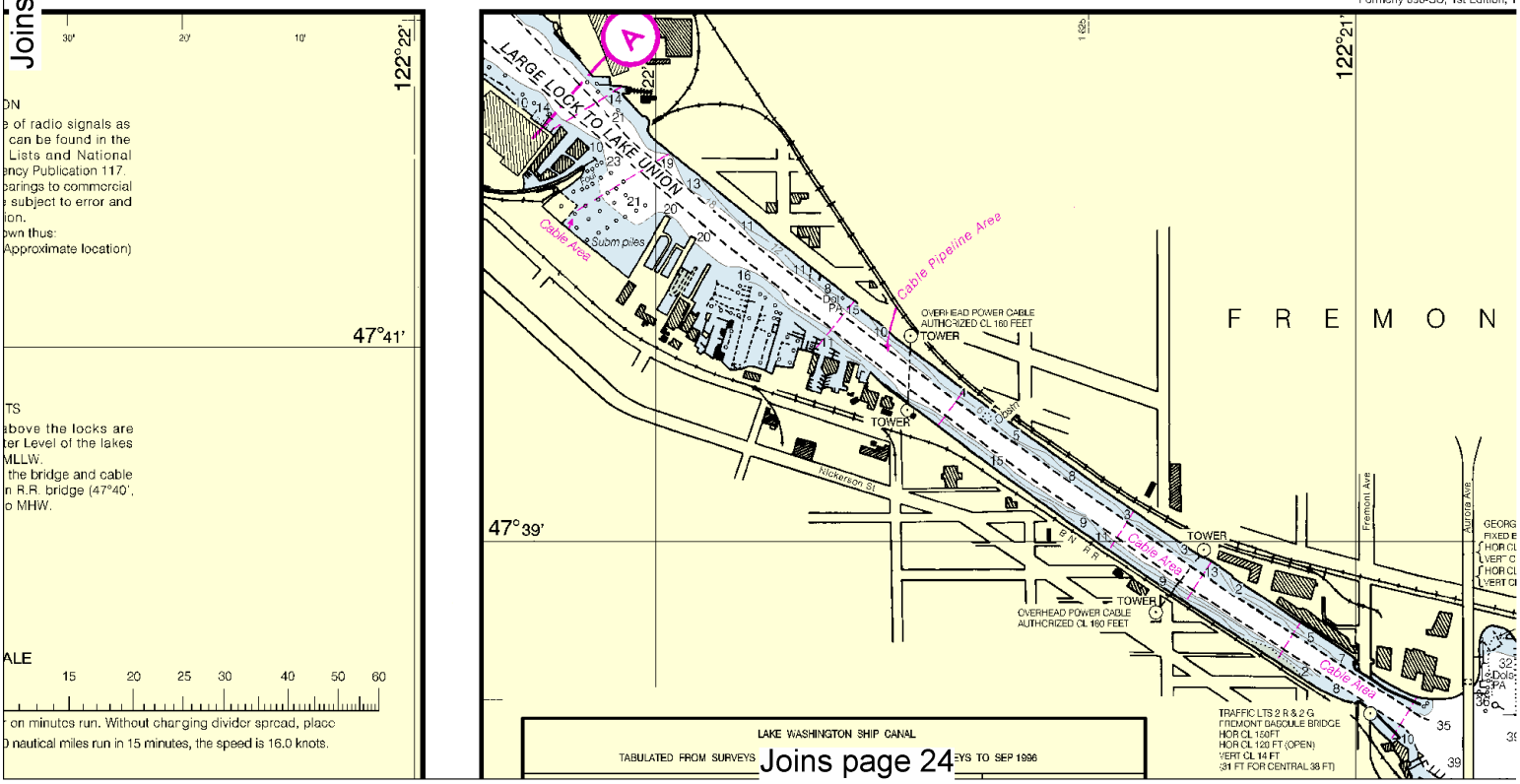


To find SPEED, place one point of dividers on distance run (in any unit) and the other on minutes run. Without changing divider spread, place right point on 60 and left point will then indicate speed in units per hour. Example: with 4.0 nautical miles run in 15 minutes, the speed is 16.0 knots.

Joins page 23



Joins page 17



Formerly 690-SC, 1st Edition, 1

North

Printed at reduced scale. ~~SCALE 1:10,000~~ See Note on page 5.

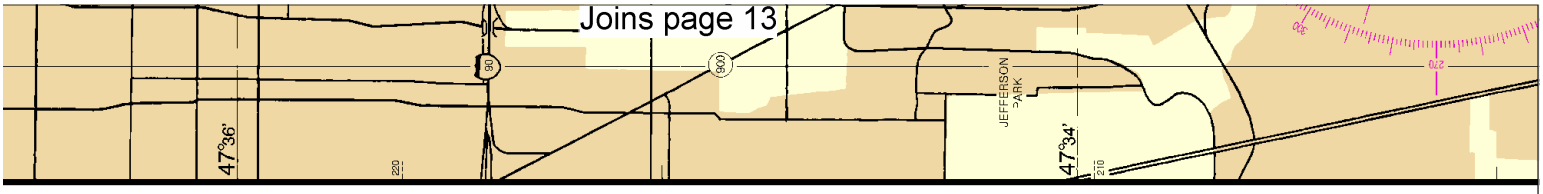
Nautical Miles

0

Yards

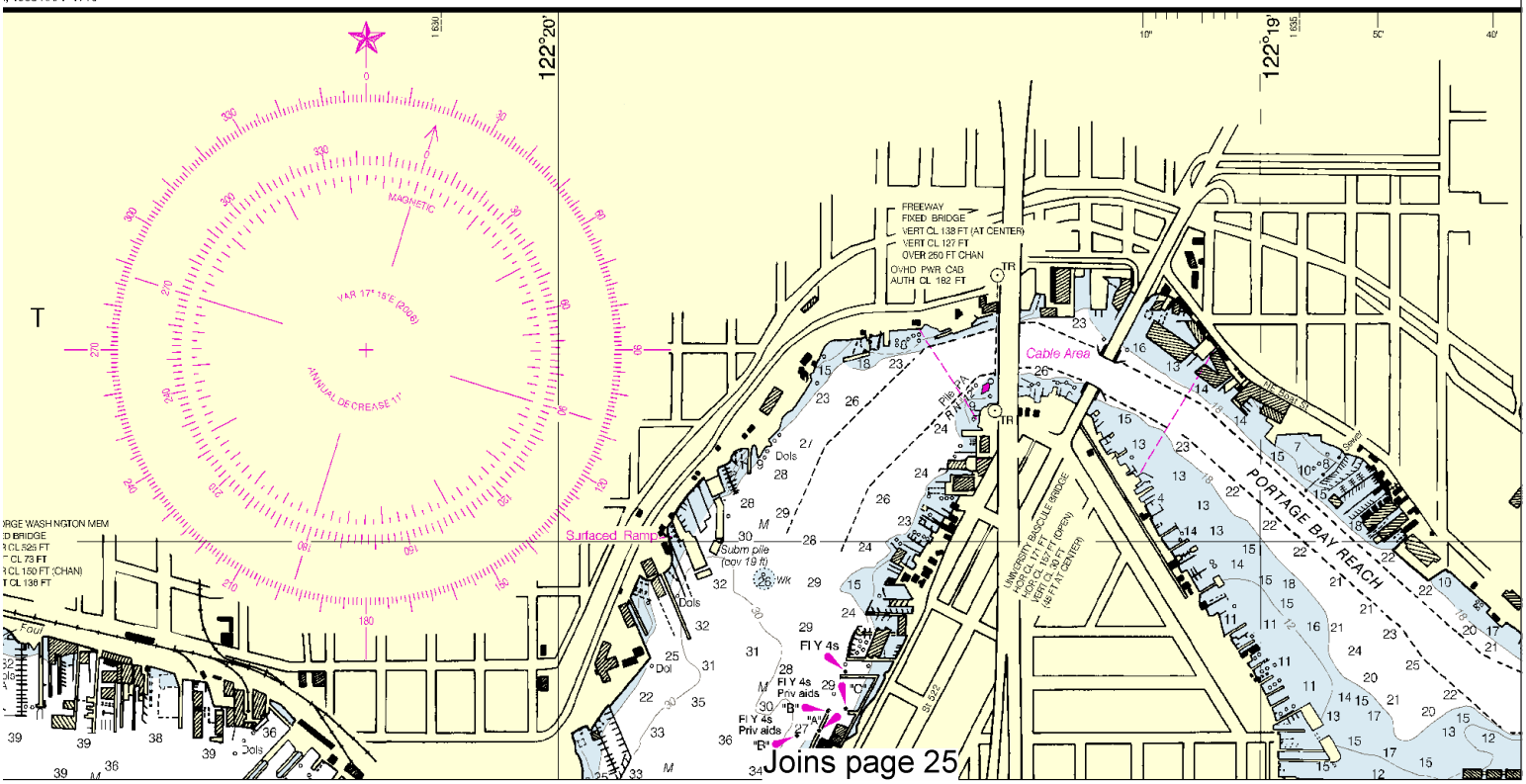
200 0 200 400 600 800 1000 1200

Joins page 13

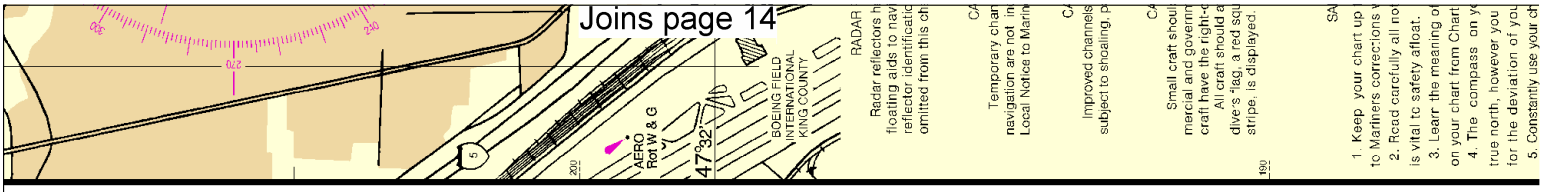


Joins page 20

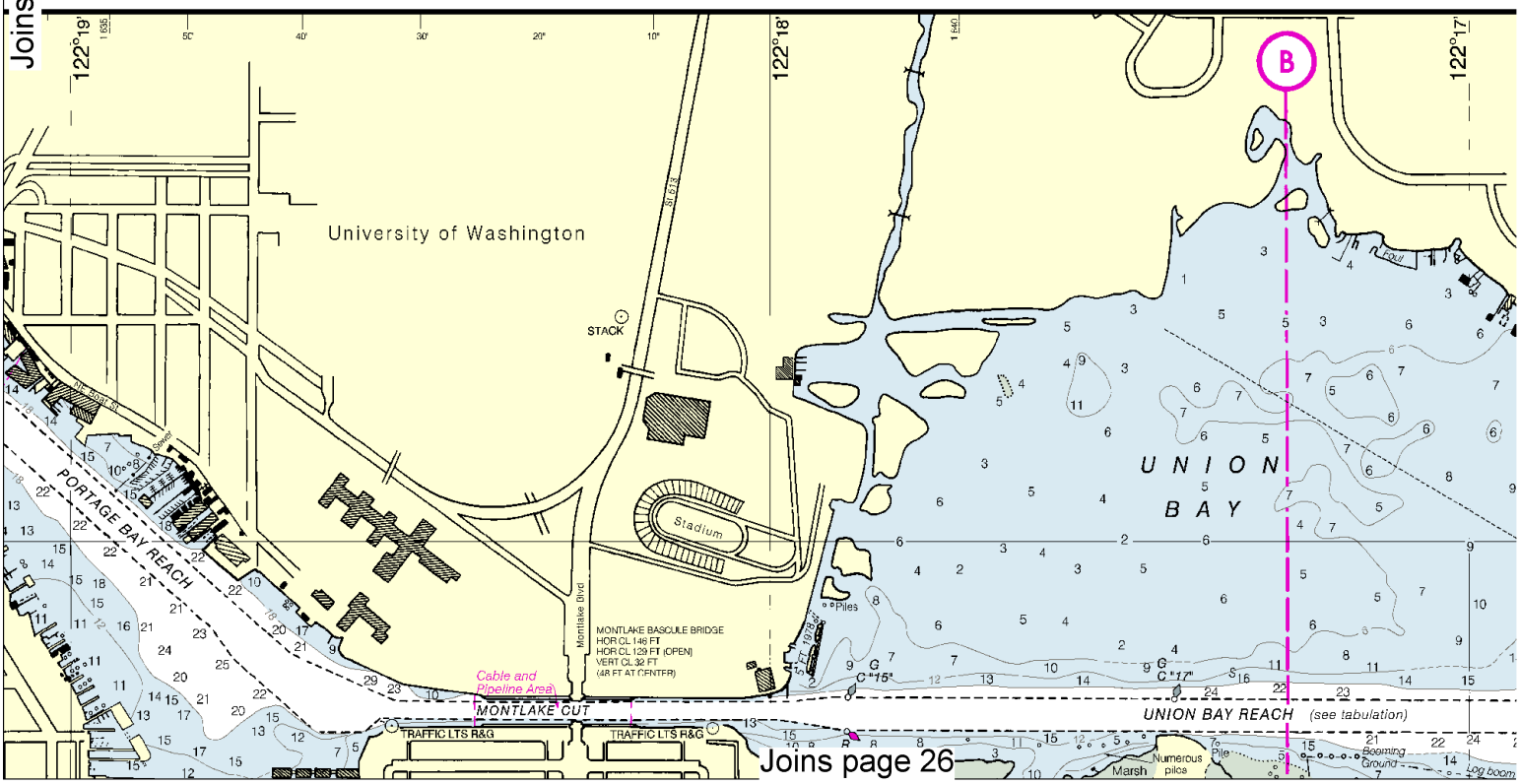
, 1963 KAPP 1710



Joins page 14



Joins page 19



Joins page 26

North

Printed at reduced scale. ~~SCALE 1:10,000~~ See Note on page 5.

Nautical Miles
0
Yards
200 0 200 400 600 800 1000 1200

Joins page 15

5. Constantly use your ch
of each trip. Keep in mi
with respect to the char
6. Maintain your posi
charted features with t
surroundings.

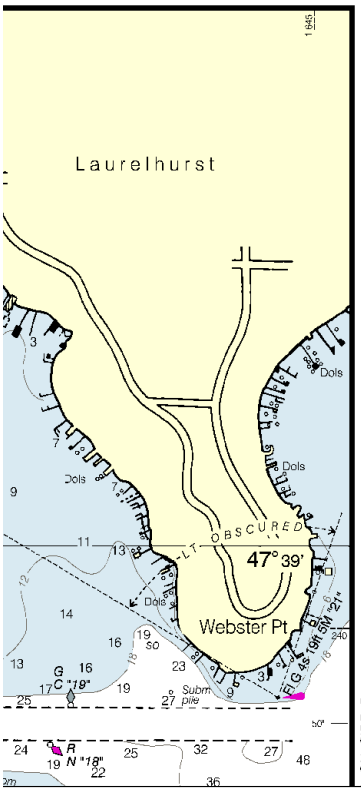
122°18'

1000

1000

SHILSHOLE BAY

18447



ABBREVIATIONS (For complete list of Symbols and Abbreviations, see Chart No. 1.)

Aids to Navigation (lights are white unless otherwise indicated):

AERO aeronautical	G green	Mo morse code	R TR radio tower
Al alternating	IQ interrupted quick	N nun	Rot rotating
B black	Iso isophase	OBSC obscured	s seconds
Bn beacon	LT HO lighthouse	Oc occulting	SEC sector
C can	M nautical mile	Or orange	St M statute miles
DIA diaphone	m minutes	Q quick	VQ very quick
F fixed	MICRO TR microwave tower	R red	W white
Fl flashing	Mkr marker	Ra Ref radar reflector	WHIS whistle
		R Bn radiobeacon	Y yellow

Bottom characteristics:

Blds boulders	Co coral	gy gray	Oys oysters	so soft
bk broken	G gravel	h hard	Rk rock	Sh shells
Cy clay	Grs grass	M mud	S sand	sy sticky

Miscellaneous:

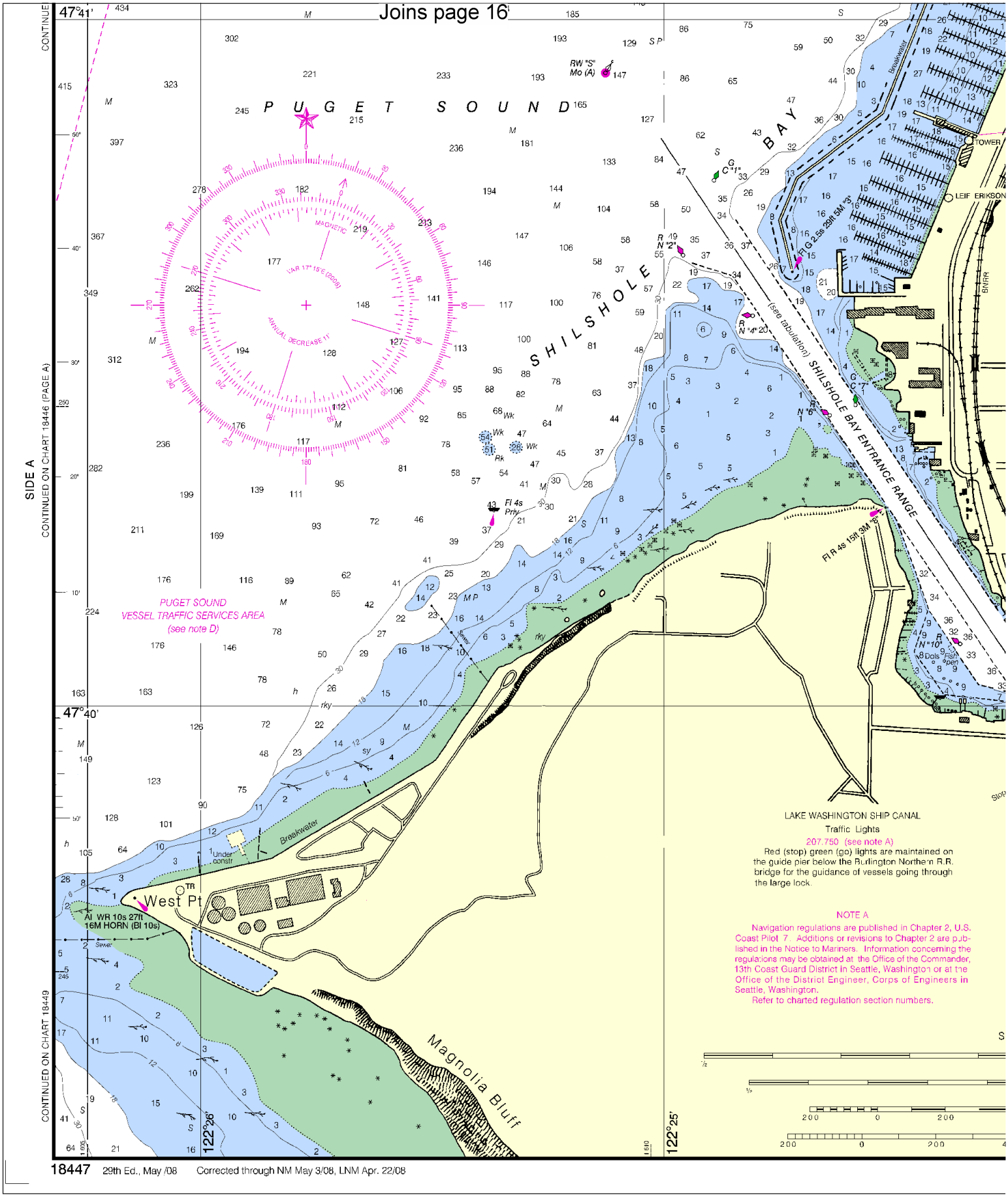
AUTH authorized	Obstn obstruction	PD position doubtful	Subm submerged
ED existence doubtful	PA position approximate	Rep reported	

(21) Wreck, rock, obstruction, or shoal swept clear to the depth indicated.
(2) Rocks that cover and uncover, with heights in foot above datum of soundings.

WARNING

The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

Joins page 27



18447 29th Ed., May /08 Corrected through NM May 3/08, LNM Apr. 22/08

North

Printed at reduced scale. ~~SCALE 1:10,000~~ See Note on page 5.

Nautical Miles

0

Yards

200 0 200 400 600 800 1000 1200

Joins page 17

length shall not hamper, in a narrow channel, the safe passage of a vessel which can navigate only inside that channel.
A motorboat being overtaken has the right-of-way.
Motorboats approaching head to head or nearly so should pass port to port.
When motorboats approach each other at right angles or obliquely, the boat on the right has the right-of-way in most cases.
Motorboats must keep to the right in narrow channels when safe and practicable.
Mariners are urged to become familiar with the complete text of the Rules of the Road in U.S. Coast Guard publication "Navigation Rules."

AIDS TO NAVIGATION

Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

CAUTION

WARNINGS CONCERNING LARGE VESSELS

The "Rules of the Road" state that recreational boats shall not impede the passage of a vessel that can navigate only within a narrow channel or fairway. Large vessels may appear to move slowly due to their large size but actually transit at speeds in excess of 12 knots, requiring a great distance in which to maneuver or stop. A large vessel's superstructure may block the wind with the result that sailboats and sailboards may unexpectedly find themselves unable to maneuver. Bow and stern waves can be hazardous to small vessels. Large vessels may not be able to see small craft close to their bows.

CAUTION

Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.
Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

CAUTION

Mariners are warned to stay clear of the protective riprap surrounding navigational light structures shown thus:

HEIGHTS

Vertical clearances above the locks are referenced to Mean Water Level of the lakes which is 21 feet above MLLW.
Vertical clearances for the bridge and cable at the Burlington Northern R.R. bridge (47°40', 122°24') are referenced to MHW.

LOGARITHMIC SPEED SCALE

1 2 3 4 5 6 7 8 9 10 15 20 25 30 40

To find SPEED, place one point of dividers on distance run (in any unit) and the other on minutes run. Without changing divider spread, place right point on 60 and left point will then indicate speed in units per hour. Example: with 4.0 nautical miles run in 15 minutes, the speed is 16.0 knots.

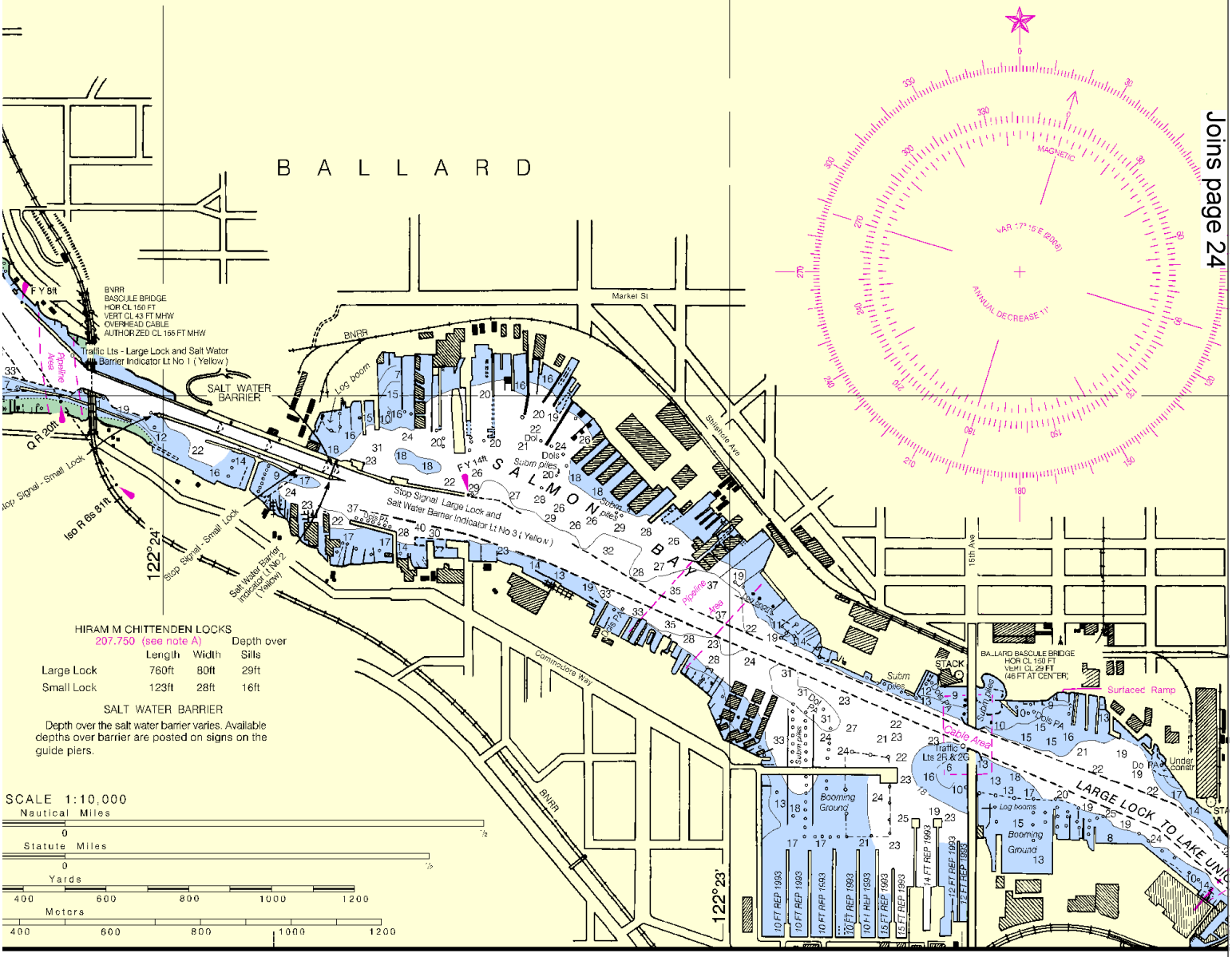
PLANE COORDINATE GRID

(based on NAD 1927)

Washington State Grid, north zone, is indicated on this chart at 5,000 foot intervals thus: The last three digits are omitted.

FACILITIES

Locations of public marine facilities are shown by large magenta numbe with leaders and refer to the facility tabulation.



HIRAM M CHITTENDEN LOCKS
207.750 (see note A)

	Length	Width	Depth over Sills
Large Lock	760ft	80ft	29ft
Small Lock	123ft	28ft	16ft

SALT WATER BARRIER

Depth over the salt water barrier varies. Available depths over barrier are posted on signs on the guide piers.

SCALE 1:10,000

Nautical Miles 0 ½

Statute Miles 0 ½

Yards 400 600 800 1000 1200

Meters 400 600 800 1000 1200

Joins page 24

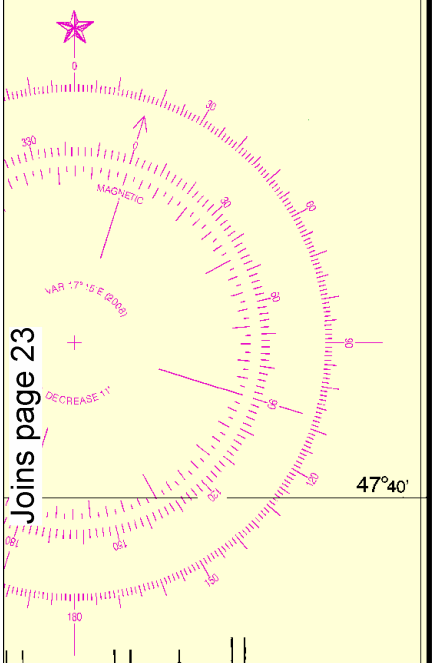
Joins page 18

47°41'

TS
above the locks are
ter Level of the lakes
MLLW.
the bridge and cable
n R.R. bridge (47°40',
o MHW.

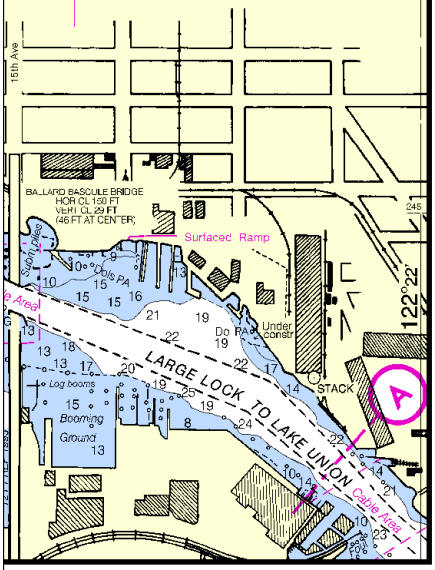
ALE
15 20 25 30 40 50 60
on minutes run. Without changing divider spread, place
) nautical miles run in 15 minutes, the speed is 16.0 knots.

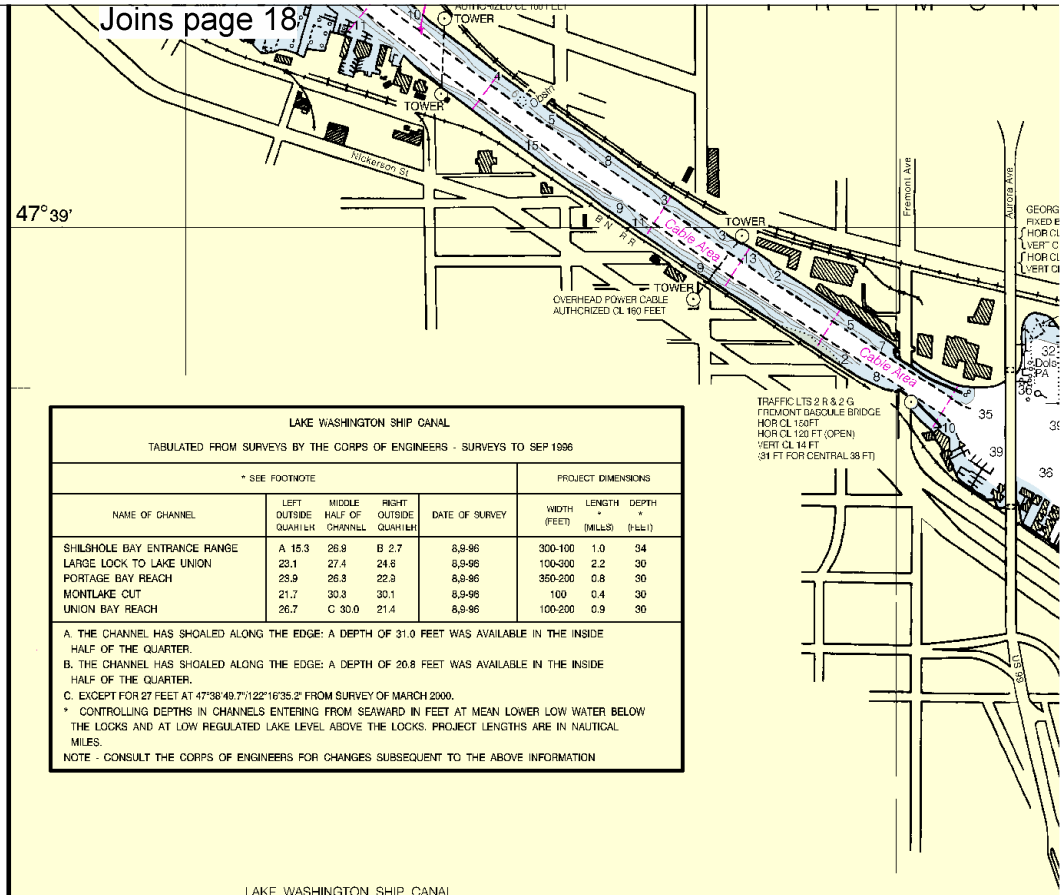
FACILITIES
narine facilities are shown by large magenta numbers
the facility tabulation.



Joins page 23

47°40'





47°39'

LAKE WASHINGTON SHIP CANAL

TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS - SURVEYS TO SEP 1996

* SEE FOOTNOTE					PROJECT DIMENSIONS		
NAME OF CHANNEL	LEFT OUTSIDE QUARTER	MIDDLE HALF OF CHANNEL	RIGHT OUTSIDE QUARTER	DATE OF SURVEY	WIDTH (FEET)	LENGTH * (MILES)	DEPTH * (FEET)
SHILSHOLE BAY ENTRANCE RANGE	A 15.3	26.9	B 2.7	8,9-96	300-100	1.0	34
LARGE LOCK TO LAKE UNION	23.1	27.4	24.8	8,9-96	100-300	2.2	30
PORTAGE BAY REACH	23.9	26.3	22.3	8,9-96	350-200	0.8	30
MONTLAKE CUT	21.7	30.3	30.1	8,9-96	100	0.4	30
UNION BAY REACH	26.7	C 30.0	21.4	8,9-96	100-200	0.9	30

A. THE CHANNEL HAS SHOALED ALONG THE EDGE: A DEPTH OF 31.0 FEET WAS AVAILABLE IN THE INSIDE HALF OF THE QUARTER.
B. THE CHANNEL HAS SHOALED ALONG THE EDGE: A DEPTH OF 20.8 FEET WAS AVAILABLE IN THE INSIDE HALF OF THE QUARTER.
C. EXCEPT FOR 27 FEET AT 47°38'49.7"/122°16'35.2" FROM SURVEY OF MARCH 2000.
* CONTROLLING DEPTHS IN CHANNELS ENTERING FROM SEAWARD IN FEET AT MEAN LOWER LOW WATER BELOW THE LOCKS AND AT LOW REGULATED LAKE LEVEL ABOVE THE LOCKS. PROJECT LENGTHS ARE IN NAUTICAL MILES.
NOTE - CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION

LAKE WASHINGTON SHIP CANAL
BRIDGE SIGNALS

The signal to open bridges is one prolonged blast followed by one short blast of whistle or horn for all bridges across the Lake Washington Ship Canal.

Five short blasts of whistle or horn from any bridge indicates the draw is not ready to be opened immediately.

QUEEN ANNE HI

LAKE WASHINGTON SHIP CANAL
SPEED LIMITS

Speed limit is 7 knots from Hiram M. Chittenden Locks to Webster Point Light (Lake Washington), except in Lake Union test area marked by four buoys.

47°38'

LOCK SIGNALS

The signal to open locks is two long blasts followed by three short blasts of whistle or horn for vessels with tows, and two long blasts followed by two short blasts for all other vessels.

Bridge and navigation regulations, including special regulations for transit over the Salt Water Barrier in the Hiram Chittenden Locks, are published in U.S. Coast Pilot 7.

Copies of the regulations may be obtained at the office of the District Engineer, Corps of Engineers, in Seattle.

Refer to section number 207.750 for navigation regulations and section number 117.795 for bridge regulations.

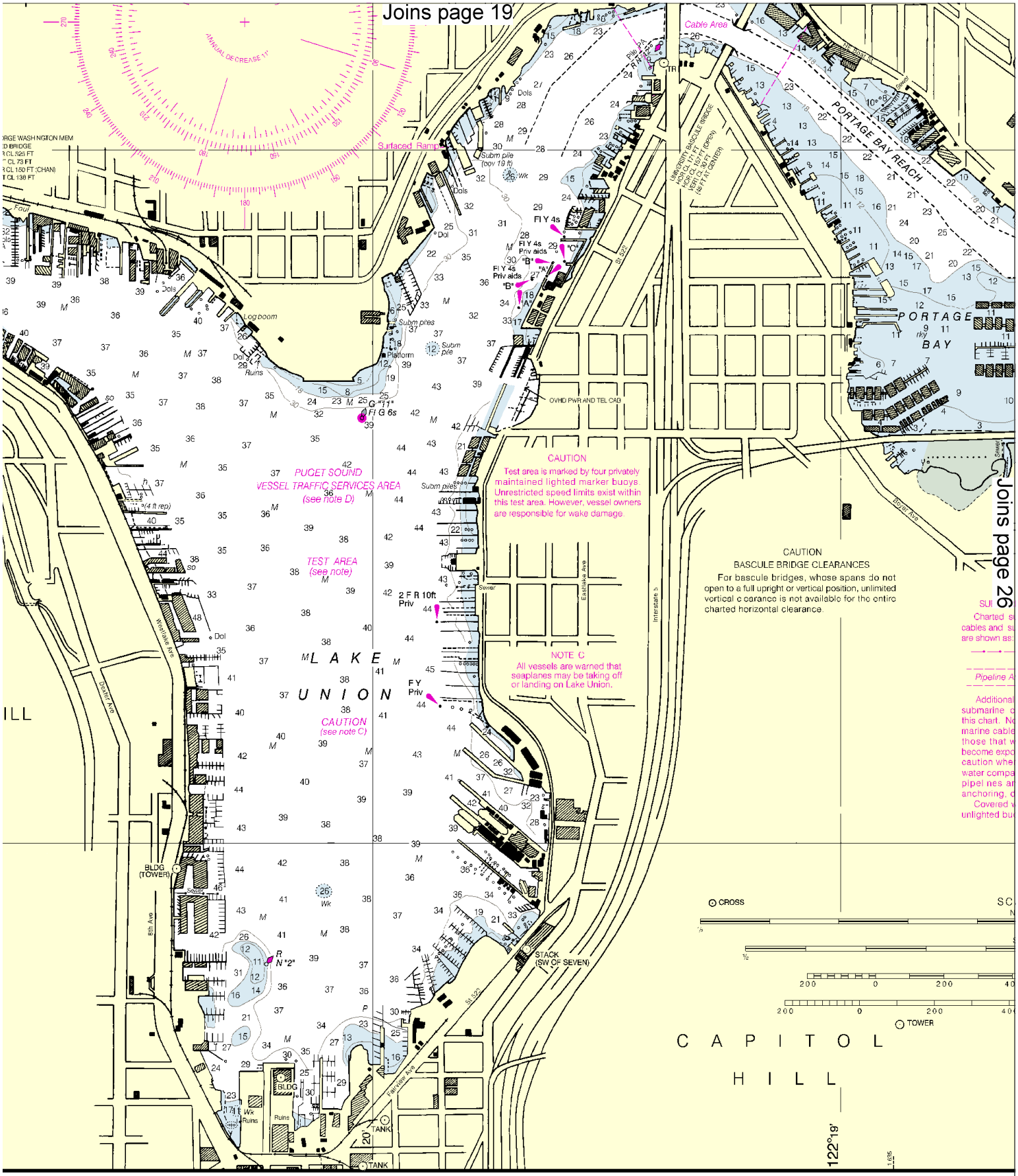
TV TOWER 1009 FT (Fl R Lt)
TV TOWER 1005 FT (Fl R Lt)
TV TOWER 1006 FT (Fl R Lt)

122°22'
122°21'

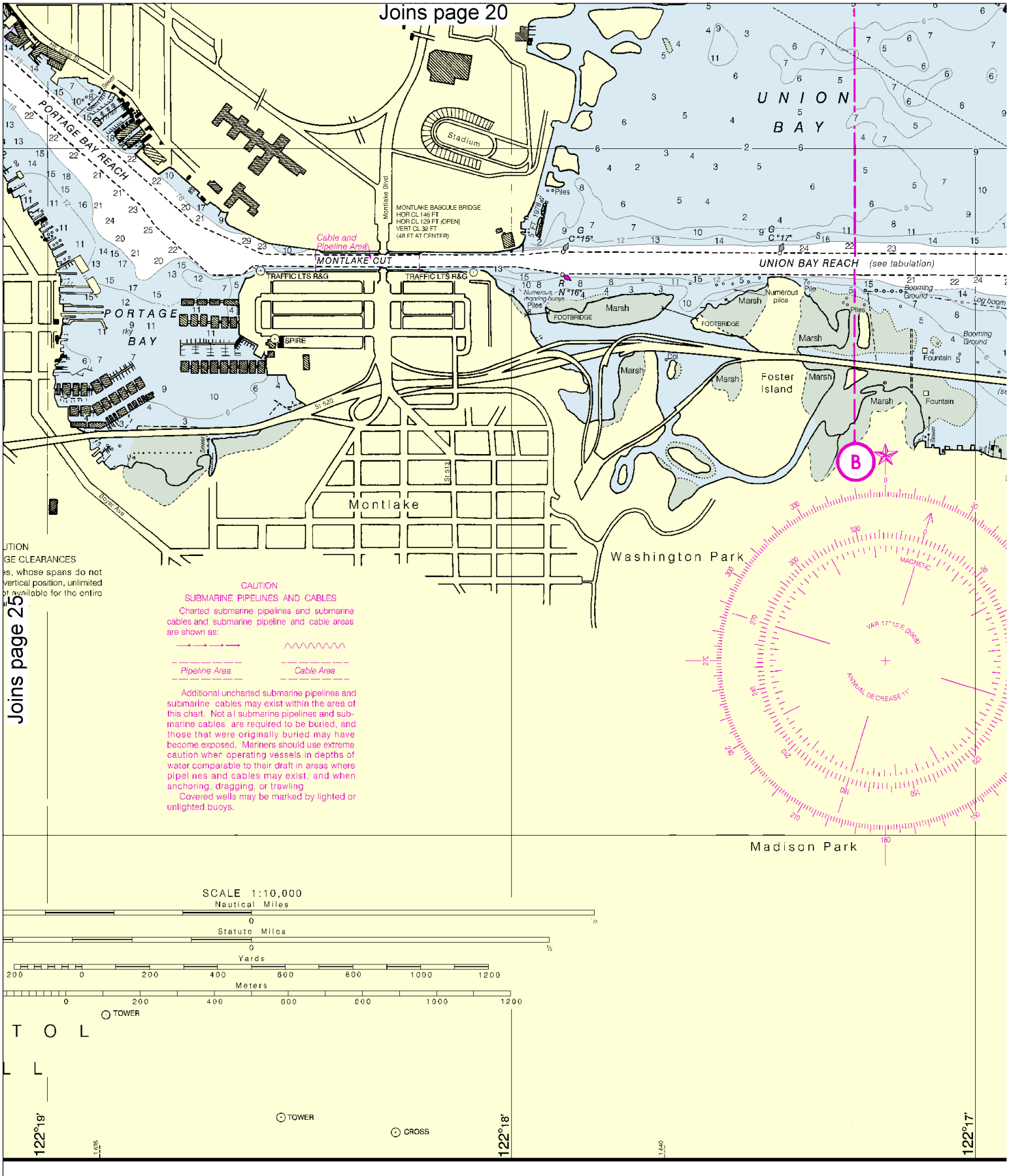
North

Printed at reduced scale. ~~SCALE 1:10,000~~ See Note on page 5.

Nautical Miles
0
Yards
200 0 200 400 600 800 1000 1200


Joins page 19
Joins page 26
PUGET SOUND
VESSEL TRAFFIC SERVICES AREA
(see note D)
TEST AREA
(see note)
CAUTION
(see note C)
CAUTION
Test area is marked by four privately maintained lighted marker buoys. Unrestricted speed limits exist within this test area. However, vessel owners are responsible for wake damage.
CAUTION
BASCULE BRIDGE CLEARANCES
For bascule bridges, whose spans do not open to a full upright or vertical position, unlimited vertical clearance is not available for the entire charted horizontal clearance.
NOTE C
All vessels are warned that seaplanes may be taking off or landing on Lake Union.
LAKE UNION
PORTAGE BAY REACH
PORTAGE BAY
CAPITOL HILL
Cable Area
Surfaced Ramp
Log boom
Subm piles
Platform
Ruins
G "17"
Fl G 6s
Fl Y 4s
Fl Y 4s Priv aids
"A"
"B"
"C"
OVHD PWR AND TEL CAB
2 F R 10ft Priv
F Y Priv
R N "2"
STACK (SW OF SEVEN)
BLDG (TOWER)
TANK
CROSS
TOWER
Fairview Ave
Eastlake Ave
Boyer Ave
Westlake Ave
Dexter Ave
8th Ave
Interstate 5
122°19'

Joins page 20



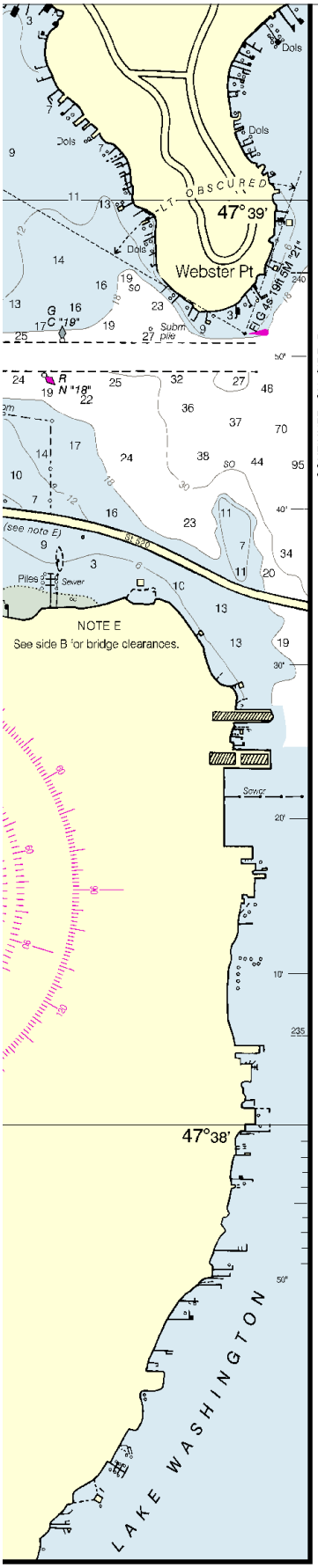
Joins page 25

North

Printed at reduced scale. ~~SCALE 1:10,000~~ See Note on page 5.

Nautical Miles

Yards



Iso isophase
LT HO lighthouse
M nautical mile
m minutes
MICRO TR microwave tower
Mkr marker

OBSC obscured
Oc occulting
Or orange
Q quick
R red
Ra Ref radar reflector
R Bn radiobeacon

s seconds
SEC sector
St M statute miles
VQ very quick
W white
WHIS whistle
Y yellow

C can
DIA diaphone
F fixed
Fl flashing

Bottom characteristics:

Blds boulders
bk broken
Cy clay
Co coral
G gravel
Grs grass
gy gray
h hard
M mud
Oys oysters
Rk rock
S sand
so soft
Sh shells
sy sticky

Miscellaneous:

AUTH authorized
ED existence doubtful
Obstn obstruction
PA position approximate
PD position doubtful
Rep reported
Subm submerged

21 Wreck, rock, obstruction, or shoal swept clear to the depth indicated.
(2) Rocks that cover and uncover, with heights in feet above datum of soundings.

WARNING

The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

DETERMINATION OF WIND SPEED FROM SEA CONDITION

Wind Speed (knots)	Wind Description	Sea Conditions	Wind Force (Beaufort)	Probable Wave Height (feet)
0-1	Calm	Sea smooth and mirror-like.	0	-
1-3	Light air	Scale-like ripples without foam crests.	1	$\frac{1}{4}$
4-6	Light breeze	Small, short wavelets; crests have a glassy appearance and do not break.	2	$\frac{1}{2}$
7-10	Gentle breeze	Large wavelets; some crests begin to break; foam of glassy appearance. Occasional white foam crests.	3	2
11-16	Moderate breeze	Small waves, becoming longer; fairly frequent white foam crests.	4	4
17-21	Fresh breeze	Moderate waves, taking a more pronounced long form; many white foam crests; there may be some spray.	5	6
22-27	Strong breeze	Large waves begin to form; white foam crests are more extensive everywhere; there may be some spray.	6	10
28-33	Near gale	Sea heaps up and white foam from breaking waves begin to be blown in streaks along the direction of the wind; spindrift begins.	7	14
34-40	Gale	Moderately high waves of greater length; edges of crests break into spindrift; foam is blown in well-marked streaks along the direction of the wind.	8	18

POLLUTION REPORTS

Report all spills of oil and hazardous substances to the National Response Center via 1-800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).

This nautical chart has been designed to promote safe navigation. The National Ocean Service encourages users to submit corrections, additions, or comments for improving this chart to the Chief, Marine Chart Division (N/CS2), National Ocean Service, NOAA, Silver Spring, Maryland 20910-3282.

COLREGS, 80.1395 (see note A)
International Regulations for Preventing Collisions at Sea, 1972.
The entire area of this chart falls seaward of the COLREGS Demarcation Line.

SIDE A

18447

EMERGENCY INFORMATION

VHF Marine Radio channels for use on the waterways:

Channel 6 – Inter-ship safety communications.
Channel 9 – Communications between boats and ship-to-coast.
Channel 13 – Navigation purposes at bridges, locks, and harbors.
Channel 16 – Emergency, distress and safety calls to Coast Guard and others, and to initiate calls to other vessels. Contact the other vessel, agree to another channel, and then switch.
Channel 22A – Calls between the Coast Guard and the public. Severe weather warnings, hazards to navigation and safety warnings are broadcast here.
Channels 68, 69, 71, 72 & 78A – Recreational boat channels.

Distress Call Procedures

1. Make sure radio is on.
2. Select Channel 16.
3. Press/Hold the transmit button.
4. Clearly say: "MAYDAY, MAYDAY, MAYDAY."
5. Also give: Vessel Name and/or Description; Position and/or Location; Nature of Emergency; Number of People on Board.
6. Release transmit button.
7. Wait for 10 seconds – If no response Repeat MAYDAY Call.

HAVE ALL PERSONS PUT ON LIFE JACKETS !!

Mobile Phones – Call 911 for water rescue.
Coast Guard Search & Rescue – 206-220-7001
Coast Guard Seattle – 206-217-6001
Commercial Vessel Assistance – 1-800-367-8222

NOAA Weather Radio – 162.400 MHz, 162.425 MHz, 162.450 MHz, 162.475 MHz, 162.500 MHz, 162.525 MHz, 162.550 MHz.

Getting and Giving Help – Signal other boaters using visual distress signals (flares, orange flag, lights, arm signals); whistles; horns; and on your VHF radio. You are required by law to help boaters in trouble. Respond to distress signals, but do not endanger yourself.

NOAA, The Nation's Chartmaker

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Official NOAA Nautical Charts – NOAA surveys and charts the national and territorial waters of the U.S, including the Great Lakes. We produce over 1,000 traditional nautical charts covering 3.4 million square nautical miles. Carriage of official NOAA charts is mandatory on the commercial ships that carry our commerce. They are used on every Navy and Coast Guard ship, fishing and passenger vessels, and are widely carried by recreational boaters. NOAA charts are available from official chart agents listed at: www.NauticalCharts.NOAA.gov.

Official Print-on-Demand Nautical Charts – These full-scale NOAA charts are updated weekly by NOAA for all Notice to Mariner corrections. They have additional information added in the margin to supplement the chart. Print-on-Demand charts meet all federal chart carriage regulations for charts and updating. Produced under a public/private partnership between NOAA and OceanGrafix, LLC, suppliers of these premium charts are listed at www.OceanGrafix.com.

Official Electronic Navigational Charts (NOAA ENCs®) – ENCs are digital files of each chart's features and their attributes for use in computer-based navigation systems. ENCs comply with standards of the International Hydrographic Organization. ENCs and their updates are available for free from NOAA at www.NauticalCharts.NOAA.gov.

Official Raster Navigational Charts (NOAA RNCs™) – RNCs are geo-referenced digital pictures of NOAA's charts that are suitable for use in computer-based navigation systems. RNCs comply with standards of the International Hydrographic Organization. RNCs and their updates are available for free from NOAA at www.NauticalCharts.NOAA.gov.

Official BookletCharts™ – BookletCharts™ are reduced scale NOAA charts organized in page-sized pieces. The "Home Edition" can be downloaded from NOAA for free and printed. The Internet address is www.NauticalCharts.gov/bookletcharts.

Official PocketCharts™ – PocketCharts™ are for beginning recreational boaters to use for planning and locating, but not for real navigation. Measuring a convenient 13" by 19", they have a 1/3 scale chart on one side, and safety, boating, and educational information on the reverse. They can be purchased at retail outlets and on the Internet.

Official U.S. Coast Pilot® – The Coast Pilots are 9 text volumes containing information important to navigators such as channel descriptions, port facilities, anchorages, bridge and cable clearances, currents, prominent features, weather, dangers, and Federal Regulations. They supplement the charts and are available from NOAA chart agents or may be downloaded for free at www.NauticalCharts.NOAA.gov.

Official On-Line Chart Viewer – All NOAA nautical charts are viewable here on-line using any Internet browser. Each chart is up-to-date with the most recent Notices to Mariners. Use these on-line charts as a ready reference or planning tool. The Internet address is www.NauticalCharts.gov/viewer.

Official Nautical Chart Catalogs – Large format, regional catalogs are available for free from official chart agents. Page size, state catalogs are posted on the Internet and can be printed at home for free. Go to http://NauticalCharts.NOAA.gov/mcd/ccatalogs.htm.

Internet Sites: www.NauticalCharts.NOAA.gov, www.NOAA.gov, www.TidesandCurrents.NOAA.gov, www.NOS.NOAA.gov.